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San Diego, CA
Santa Barbara, CA
Walnut Creek, CA
Washington, DC

**PALADIN LAW GROUP® LLP**

*Generating Professional:*
John R. Till, Walnut Creek Office
JTill@PaladinLaw.com

August 1, 2014

***Via Registered Mail, Return Receipt Requested***

William B. Reilly
2940 Bonnie Lane
Pleasant Hill, CA 94523

William Segraves
7009 Red Sky Ln.
Nampa, ID 83686-7067

Re: *Notice of Endangerment and Intent to Sue Under RCRA § 7002(a)(1)(B), Regarding Contamination at 1601-1699 Contra Costa Boulevard, 74 Doris Drive, and 69 and 75 Doray Drive, Pleasant Hill, CA*

Dear Sirs:

We have been retained by Mr. Ryan Schaeffer and Mrs. Anne Schaeffer, and their daughter Reese Schaeffer ("the Schaeffers"), in connection with their claim against you arising out of contamination at and emanating from your gun service and repair shop operations at 69 Doray Drive, a commercial property located in Pleasant Hill, California, also known as Valley Gun Service or Diablo Valley Gun, and which contamination has come or is coming to be located at or in the vicinity of the Gregory Village Shopping Center (1601-1699 Contra Costa Boulevard, 74 Doris Drive, and 69 and 75 Doray Drive) and 95 Cynthia Drive, Pleasant Hill, California, 94523 (the "Schaeffer Property") and/or adjacent residential or commercial properties (collectively, the "Site"). We are writing to you to give notice that the Schaeffers intend to file a civil action against you under Resource Conservation and Recovery Act ("RCRA") § 7002(a)(1)(B), 42 U.S.C. § 6972(a)(1)(B), alleging that you are liable as a "past or present generator [and] past or present owner or operator of a treatment, storage, or disposal facility, who has contributed or who is contributing to the past or present handling, storage, treatment, transportation, or disposal of any solid or hazardous waste which may present an imminent and substantial endangerment to health or the environment."

Specifically, you are the past owner and/or operator of a gun service and repair shop, during which time chemicals were used, handled, stored, disposed, and released into the environment. We understand that various solvents were stored in vats and used for repair and maintenance of guns during your operations. During your ownership and/or operation, contamination was released into the environment, as evidenced by environmental testing related to, but not limited to, the use and disposal of solvents and other hazardous substances during your gun shop operations. The contamination at or emanating from the soil and groundwater at the Site includes total petroleum hydrocarbons ("TPH"), benzene, toluene, ethylbenzene, and xylenes ("BTEX"), tetrachloroethylene (PCE), trichloroethylene (TCE), trans-1,2-dichloroethylene, cis-1,2-dichloroethylene, 1,2-dichloroethane, and vinyl chloride.

In June 2011, the Schaeffers brought a lawsuit in the Contra Costa County Superior Court against Chevron U.S.A. Inc., past owners/operators gasoline service station, automotive repair, and carwash operations at 1705 Contra Costa Boulevard (the "Chevron Property"), MB Enterprises (current owners/operators of the Chevron Property), and past and present owners and operators of the Gregory Village Shopping Center at 1601-1699 Contra Costa Boulevard (the "Gregory Village Property"), past and present owners and operators of dry cleaner operations at the Gregory Village Property, and other defendants, in

connection with contamination at and emanating from the Chevron Property and the Gregory Village Property. The action was later removed by the defendants to the U.S. District Court for the Northern District of California.[1]

## I. The Location of the Imminent and Substantial Endangerment to Health or the Environment

Through your ownership and/or operation of a business at the Site, you played a role in causing or contributing to the toxic vapor, soil, and groundwater that are migrating onto adjacent residential properties—including the Schaeffers' home—and commercial properties, and within the Site. Environmental investigations at the Site demonstrate that the vapor, soil, and groundwater at and emanating from the Site are impacted by chlorinated solvents and petroleum hydrocarbons from historical dry cleaning and/or gasoline service station, automotive repair, and carwash activities. More specifically, environmental testing demonstrates that the contamination has caused the indoor air at the Schaeffers' home and other surrounding residential properties to be unsafe. The nature and extent of the contamination at the Site has been more fully discussed in a variety of reports concerning the Site that you may obtain access to upon a request to the California Regional Water Quality Control Board, San Francisco Bay Region or at http://geotracker.waterboards.ca.gov/ --- for the locations identified as:

- P & K Cleaners (SLT20215317) at 1643 Contra Costa Boulevard, Pleasant Hill, California (http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=SLT2O215317); and
- Chevron (T0601300404) at 1705 Contra Costa Boulevard, Pleasant Hill, California (http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0601300404).
- As a further basis for this notice of the type, location, nature, and extent of contamination at the Site and the nature of the problem that needs to be investigated and remediated, we are also providing you with a copy of the San Francisco Bay Regional Water Quality Control Board's (RWQCB) July 2, 2014, transmittal letter and Staff Report and Tentative Orders regarding Site Cleanup Requirements for 1643 Contra Costa Boulevard and 1705 Contra Costa Boulevard, Pleasant Hill, Contra Costa County, California, all of which are attached hereto.

The term "Site" includes the environment, including soil, groundwater, vapor, and buildings, and any location at which hazardous substances, hazardous materials, or solid waste has come to be located or may be threatened with such contamination.

The Schaeffers purchased the Schaeffer Property on or about June 1, 2006. Reese Schaeffer was born in the house on May 31, 2010. The contamination at their property was not known at the time of purchase, and the Schaeffers did not learn of the contamination until after the purchase. The Schaeffers have been exposed to contamination in their home due to the contamination at the site migrating in the environment.

## II. The Hazardous Waste Which May Present and Imminent and Substantial Endangerment to Health or the Environment

You are responsible for creating, maintaining, and/or leaving in place environmental conditions that may pose an imminent and substantial endangerment to public health or the environmental in violation of RCRA. You contributed to the "solid waste" and "hazardous waste" causing the contamination at the Site by handling, discarding, discharging, spilling, or releasing petroleum hydrocarbons and volatile organic compounds (VOCs), suddenly and accidentally, negligently, or otherwise, so that the contaminants entered

[1] Ryan Schaeffer et al., v. Gregory Village Partners, L.P., et al., Case No. 3:13-CV-4358-JST (N.D. Cal.).

the environment, and/or owned and operated the property at which these releases occurred. These unauthorized releases continue to migrate in the environment causing property damage and appreciable harm to the air, soil, surface water, and groundwater at and around the Site. Moreover, the contaminants may present an imminent and substantial endangerment to health or the environment, including the surface and sub-surface soils, surface water, groundwater aquifers, air, and natural resources.

In the spring of 2008, a soil gas investigation was performed, and 24 soil gas samples were collected and analyzed in an on-site mobile laboratory. The soil gas investigation identified two areas with elevated concentrations: one in the area of the dry cleaners at the Gregory Village Property and the other near the intersection of Shirley Drive and Cynthia Drive (downgradient). Off-site confirmation soil gas sampling was completed in August 2008. Sampling of soil gas was conducted at the Schaeffer Property on June 14, 2010. The Regional Water Quality Control Board ("RWQCB") Environmental Screening Level ("ESL") for residential shallow soil gas of 210 $\mu g/m^3$. The June 14, 2010, sampling measured 12,800 $\mu g/m^3$ of PCE in sub-slab vapor under the garage. Re-sampling of soil gas at the same location on August 8, 2010, measured PCE at 18,600 $\mu g/m^3$. The ESL for indoor air is 0.41 $\mu g/m^3$. Air sampling within the Plaintiffs' Home in August 2010 measured PCE at 1.04 $\mu g/m3$ and 6.46 $\mu g/m^3$ in the master bedroom and living room, respectively. Indoor air sampling by Plaintiffs' consultants, in March 2011, showed even higher concentrations of PCE in indoor air—10 $\mu g/m^3$ in the bedroom and 11 $\mu g/m^3$ in the living room. A subslab depressurization (SSD) systems, which serves only to mitigate impacts of soil vapors, was not installed at the Plaintiffs' Home until April 7, 2011.

As a result of your conduct, acts, or omissions, the Schaeffers have incurred and continue to incur significant risks to their health, to the health of their infant daughter, and to their animals—specifically two of the Schaeffers' pet cats recently died, which they now believe was the result of the toxic environmental conditions created or contributed to by you. Therefore, the Schaeffers demand that you immediately perform both: (i) a comprehensive environmental investigation to determine the vertical and horizontal nature and extent of the contamination at the Site; and (ii) a removal and cleanup of the contamination at and emanating from the Site. As an interim measure and based on the severe risk to human health from your contamination of the Schaeffers' Property, the Schaeffers demand to be immediately relocated—at the sole expense of you and other responsible parties—until such time as the investigation and remediation of the Site is complete—e.g. no trace of chlorinated solvents and petroleum hydrocarbons remain at the residential properties at the Site and closure is achieved at or below California residential environmental screening levels for the entire Site.

## III. Your Liability for the Contamination

The contamination from the Chevron Property has commingled with the contamination from the Gregory Village Property, and is indistinguishable at least on portions of the Gregory Village Property and downgradient from the Gregory Village Property, including at Plaintiffs' Home. You are liable under RCRA § 7002(a)(1)(B) as a "past or present generator [and] past or present owner or operator of a treatment, storage, or disposal facility, who has contributed or who is contributing to the past or present handling, storage, treatment, transportation, or disposal of any solid or hazardous waste which may present an imminent and substantial endangerment to health or the environment." 42 U.S.C. § 6972(a)(1)(B). As such, the court may order you to "take such . . . action as may be necessary" to clean up the contamination at the property. 42 U.S.C. § 6972(a). Furthermore, the court may order you to pay the Schaeffers' litigation costs, including reasonable attorneys and expert witness fees, if they prevail in all or part of any litigation against you. 42 U.S.C. § 6972(e).

## IV. Persons Responsible for the Imminent and Substantial Endangerment

You are responsible for the imminent and substantial endangerment, and are jointly and severally liable with any other person or entity who has also contributed to the imminent and substantial endangerment.

## V. Names and Addresses of the Persons Giving This Notice

Mr. Ryan Schaeffer and Mrs. Anne Schaeffer c/o John R. Till, Esq.
PALADIN LAW GROUP® LLP
1176 Boulevard Way
Walnut Creek, CA 94595
Telephone (925) 947-5700
Facsimile (925) 935-8488

## VI. Counsel

The Schaeffers have retained legal counsel to represent them in this matter. Please direct all communications to:

John R. Till
PALADIN LAW GROUP® LLP
1176 Boulevard Way
Walnut Creek, CA 94595
Telephone (925) 947-5700
Facsimile (925) 935-8488

During the 90-day notice period, we would be willing to discuss a negotiated solution to the imminent and substantial endangerment, the formal notice of which is given to you by this letter. However, if you wish to pursue such discussions in the absence of litigation, we suggest that you initiate those discussions within the next 14 days so that they may be completed before the end of the 90-day notice period. We do not intend to delay the filing of a complaint in federal court if discussions are continuing when that period ends.

Very truly yours,

By: _____
John R. Till
PALADIN LAW GROUP® LLP

cc: (Via Certified Mail)

Honorable Gina McCarthy
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CALIFORNIA
Water Boards

EDMUND G. BROWN JR.
GOVERNOR

MATTHEW RODRIQUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

San Francisco Bay Regional Water Quality Control Board

July 2, 2014
File No. 07S0132 (KEB)
File No. 07S0204 (KEB)

1643 Contra Costa Boulevard parties*
Gregory Village Partners, L.P.
Village Builders, L.P.
Joseph J. Lee and Grace M. Lee
Alan Choi and Kauen Choi
Joseph William O'Malley
Floyd G. Taylor

1705 Contra Costa Boulevard parties**
Chevron U.S.A. Inc.
MB Enterprises, Inc.
Philip M. Lehrman
Jane A. Lehrman
Marjorie P. Robinson

**SUBJECT: Transmittal of Staff Report and Tentative Orders – Site Cleanup Requirements for 1643 Contra Costa Boulevard and 1705 Contra Costa Boulevard, Pleasant Hill, Contra Costa County**

Dear Addressees:

Attached are the Staff Report and Tentative Orders (Site Cleanup Requirements) for the subject sites. This transmittal letter is addressed to the named dischargers listed in the Tentative Orders for the properties located at 1643 and 1705 Contra Costa Boulevard. The attached materials will also be posted on the following Regional Water Board webpage:
http://www.waterboards.ca.gov/sanfranciscobay/public_notices/#sitecleanup

This matter will be considered by the Regional Water Board during its regular meeting on September 10, 2014. The meeting will start at 9:00 am and will be held in the first floor auditorium of the Elihu Harris Building, 1515 Clay Street, Oakland, California. Any written comments by you or interested persons must be submitted to the Regional Water Board offices by August 4, 2014. Comments submitted after this date will not be considered by the Regional Water Board.

Pursuant to section 2050(c) of Title 23 of the California Code of Regulations, any party that challenges the Regional Water Board's action on this matter through a petition to the State Water Board under Water Code section 13320 will be limited to raising only those substantive issues or objections that were raised before the Regional Water Board at the public hearing or in timely submitted written correspondence delivered to the Regional Water Board (see above).

If you have any questions, please contact Kevin Brown of my staff at (510) 622-2358 [e-mail kebrown@waterboards.ca.gov].

Sincerely,

Digitally signed by Stephen Hill
Date: 2014.07.02 14:53:31
-07'00'

Bruce H. Wolfe
Executive Officer

**Attachments:** Tentative Orders
Staff Report

**cc w/attachments:** Mailing List Interested Parties

*** 1643 Contra Costa Boulevard parties:**

Village Builders, L.P.
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Alan Choi and Kauen Choi
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Fullerton, CA 92833

Mr. Joseph William O'Malley
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Mr. Floyd G. Taylor
300 Melanie Drive
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**** 1705 Contra Costa Boulevard parties:**

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**Mailing List Interested Parties**

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Paladin Law Group LLP
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JTill@PaladinLaw.com

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

TENTATIVE ORDER

ADOPTION OF INITIAL SITE CLEANUP REQUIREMENTS for:

**GREGORY VILLAGE PARTNERS, L.P.,**
**VILLAGE BUILDERS, L.P.,**
**JOSEPH J. LEE,**
**GRACE M. LEE,**
**ALAN CHOI,**
**KAUEN CHOI,**
**JOSEPH WILLIAM O'MALLEY, and**
**FLOYD G. TAYLOR**

for the property located at:

**1643 CONTRA COSTA BOULEVARD**
**PLEASANT HILL, CONTRA COSTA COUNTY**

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter "Regional Water Board"), finds that:

1. **Site Location and Description**: The 3.6-acre Gregory Village Shopping Center, a commercial retail plaza with an address of 1601-1699 Contra Costa Boulevard (Assessor's Parcel No. 150-052-009-1), is located on the west side of Contra Costa Boulevard in Pleasant Hill, California. A dry cleaner, with an address of 1643 Contra Costa Boulevard (the "Site"), once operated out of a small suite within the shopping center. Several commercial parcels are located directly north and south of the plaza, and residential properties also exist to the west and north.

2. **Site History**: The Gregory Village Shopping Center, reportedly constructed in 1950, contains approximately twenty retail and commercial tenants in a one-story building, and is currently owned by Gregory Village Partners, L.P. (herein "GVP"). Historical records indicate a dry cleaner operated within the Site from at least 1965 until the present. Gregory Cleaners and P&K Cleaners occupied the Site, from 1965-1984 and 1984-2002, respectively.

   In 1997, chlorinated volatile organic compounds ("CVOCs"), primarily the common dry cleaning solvent tetrachloroethylene (also known as "PCE" or "Perc"), were detected in shallow soil and groundwater beneath and near the dry cleaner during a due diligence investigation. PCE, a potential human carcinogen, was also detected in shallow soil vapor. Trichloroethylene ("TCE"), cis-1,2-dichloroethene ("cis-1,2-DCE"), trans-1,2-DCE, and vinyl chloride, toxic compounds formed from the degradation of PCE, were detected in soil, soil vapor, and groundwater. A CVOC groundwater plume formed from the past PCE

releases, and the plume currently extends beneath a residential subdivision to the north of the shopping center. CVOCs were detected beneath the concrete slab-on-grade floors of the former dry cleaner and several homes, and also within the indoor air of several houses.

**Dry Cleaning Business Operations:** According to information provided by GVP, the first dry cleaner to occupy the Site was "Gregory Cleaners", which reportedly started operations on or about December 2, 1965. Gregory Cleaners reportedly operated until August 1, 1984, when its name was changed to "P&K Cleaners." The dry cleaner was renamed "Nob Hill Cleaners" on or about May 6, 2002, and retained this name to approximately May 20, 2004, when it was renamed "Park Avenue Cleaners" (a name it currently holds).

According to GVP, Joseph William O'Malley and Floyd G. Taylor (February 9, 1979 to approximately 1983), Alan Choi and Kauen Choi (December 1, 1983 to August 1, 1984), and Joseph J. Lee and Grace M. Lee (August 1, 1984 to April 1, 1988), reportedly operated a dry cleaner at the Site when PCE was likely used and discharged. According to GVP, on-Site dry cleaning operations occurred between 1964 and March 1991, after which the dry cleaner became a "drop-off" and clothes were cleaned at an off-Site facility.

Regional Water Board staff was not provided with any information about operators of the dry cleaner prior to 1979, however, given the lack of records indicating a change in type of equipment, and the propensity of dry cleaners to use PCE prior to 1979, it is reasonable to conclude that PCE was used and discharged at the Site before 1979.

Regional Water Board staff discovered a reference to an April 10, 1987, Uniform Hazardous Waste Manifest (for the disposal of hazardous wastes), provided by the Department of Toxic Substances Control, for "P&K Gregory Cleaners" with the Site's address. This is consistent with the timeframe when dry cleaners using PCE used hazardous waste haulers to dispose of PCE-contaminated wastewater and other waste.

Furthermore, high concentrations of PCE were detected in soil vapor directly beneath the former dry cleaner, strong evidence that PCE was used and released at the property.

**Land Ownership during Dry Cleaner Operations:** The Gregory Village Shopping Center property was owned by several different individuals and entities since approximately 1949 to the present. The chain-of-title to the property, since December 1965 (when dry cleaning activities reportedly commenced) is as follows:

<u>December 1965 through February 25, 1998</u>

- Ken Lowry/Kenlow Corporation
    - According to the California Secretary of State's web-site, the business license for the Kenlow Corporation, who reportedly owned the shopping center starting on August 1, 1960, was suspended in 2000. No agent for service of process is listed for the company.

<u>February 25, 1998 through Present</u>

- Gregory Village Partners, L.P. (60% tenancy-in-common interest)
- Village Builders, L.P. (40% tenancy-in-common interest)

- On March 29, 2004, the Village Builders' interest was sold to Gregory Village Partners, L.P., currently holding 100% fee interest in the property

The Site currently houses Park Avenue Cleaners. Since PCE was not used at the Site for many years (reportedly since at least 1991), there is no reason to suspect the current business is responsible for the pollution.

3. **Named Dischargers**:

GVP is named as a discharger because it is the current owner of the property on which there is an ongoing discharge of pollutants, it has knowledge of the discharge or the activities that caused the discharge, and it has the legal ability to control the discharge.

Joseph J. Lee, Grace M. Lee, Alan Choi, Kauen Choi, Joseph William O'Malley, and Floyd G. Taylor are named as dischargers because of substantial evidence that they discharged pollutants to soil and groundwater at the Site: it is common knowledge that releases occurred during routine operations involving chlorinated solvents in dry cleaning; these same pollutants are present in soil and groundwater directly beneath and in the immediate vicinity of the dry cleaner; and these same pollutants are present in groundwater at and downgradient of the dry cleaner in concentrations that generally diminish with distance. Each of these dischargers knew of the discharge or activities that caused the discharge, and each had the legal ability to control the discharge during their respective period of operating the dry cleaner.

Village Builders, L.P. is named as a discharger because it is a former owner of the property during whose ownership there was an ongoing discharge of pollutants, it had knowledge of the discharge or the activities that caused the discharge, and it had legal ability to control the discharge.

If additional information is submitted indicating other parties caused or permitted any waste to be discharged on the Site where it entered or could have entered waters of the State, the Regional Water Board will consider adding those parties to this Order.

4. **Regulatory Status**: The Site is currently not subject to a Regional Water Board order.

5. **Site Hydrogeology**: The Site is located within the Ygnacio Valley Groundwater Basin, a structural depression between the Berkeley Hills to the west and the Diablo Range to the east. The basin sediments consist of thick Quaternary-age alluvial and floodplain deposits, generally comprised of unconsolidated to partially-consolidated, discontinuous layers of silt, clay, sand, and gravel. The local topography is gently tilted to the north and northwest.

Groundwater levels in the first-encountered/shallow water-bearing zone below and downgradient of the Site have fluctuated between approximately seven and 14 feet below the ground surface. The groundwater flow direction in the shallow zone has varied from northwest to northeast, with a regional flow direction to the north, at an average gradient of approximately 0.005 feet per foot.

6. **Hydrology:** The closest major surface water bodies to the Site are Grayson Creek, located approximately 2,000 feet to the west, and Walnut Creek, located roughly 2,000 feet to the east. No municipal drinking water supply wells are known to exist within a two-mile radius of the site. Shallow "backyard" irrigation wells are common on residential parcels in Pleasant Hill, but a door-to-door domestic well survey has not been completed in the residential subdivision downgradient of the Site.

7. **Remedial Investigation**: Numerous soil, soil vapor, and groundwater samples collected and analyzed during approximately 17 years of environmental investigation and cleanup activities at the Site have detected a variety of chemicals, several of which are very toxic to human health. CVOCs were detected in soil, soil vapor, and shallow groundwater within the boundaries of the shopping center and also in soil vapor and groundwater upgradient and downgradient of the Site, at concentrations above health-based standards. For example, the data indicates CVOCs are present in groundwater at levels exceeding the maximum contaminant levels (MCLs).[1]

   In 1997, several environmental assessments identified the Site as a source of PCE contamination and confirmed that two previous tenants used PCE in their dry cleaning operations. The studies confirmed the presence of CVOCs, mainly PCE, in soil and groundwater in the vicinity of the Site. PCE was detected in soil up to 1.1 mg/kg, and groundwater samples contained PCE up to 27,000 micrograms per liter (µg/L) near a sewer lateral at the rear of the Site.

   Following site investigations in 2003 and 2008 that detected PCE in soil vapor at the rear of the suite and below the Site's slab-on-grade floor, in June 2009 soil vapor samples were collected from multi-depth soil vapor probes ("MSVPs"). These MSVPs were installed in several streets within a residential neighborhood downgradient of the Site. PCE, TCE, and cis-1,2-DCE were detected at maximum concentrations of 52,100 µg/m³ at six feet, 15,700 µg/m³ at nine feet, and 16,300 µg/m³ at nine feet, respectively. The highest on-Site soil vapor concentrations were detected in MSVP-7, a probe advanced directly to the rear (west) of the dry cleaner; at this location, PCE and TCE were discovered at 54,800 µg/m³ and 6,240 µg/m³ at a depth of nine feet.

   In May 2010, five sub-slab soil vapor probes (SSVPs) were installed beneath the Site, while four probes were constructed beneath the two adjacent commercial units. Beneath the Site, PCE soil vapor concentrations ranged from 5,720 µg/m³ to 1,490,000 µg/m³, with the highest concentration directly beneath the former dry cleaner machine. Below the 1637 Contra Costa Boulevard unit (a suite directly north of the Site), PCE concentrations were 61,200 µg/m³ and 59,600 µg/m³, while PCE concentrations beneath the 1649 Contra Costa Boulevard unit (a suite directly south of the Site) were 2,100 µg/m³ and 3,080 µg/m³.

[1] The drinking water standard for PCE and TCE, known as the maximum contaminant level, or MCL, is 5 µg/L. The Regional Water Board's 2013 Environmental Screening Levels (ESLs) for potential vapor intrusion concerns at commercial facilities are 2,100 µg/m³ (PCE) and 3,000 µg/m³ (TCE), respectively.

In June 2010, PCE was detected in a sub-slab soil vapor sample collected directly beneath the garage floor of a residential property (95 Cynthia Drive) located downgradient of the Site at a concentration of 12,800 µg/m³. PCE was detected in an exterior probe (5.5 feet deep) at a concentration of 220 µg/m³. A follow-up sub-slab sample collected on August 17, 2010, detected PCE in soil vapor beneath the garage at 18,600 µg/m³. Two indoor air samples were also collected on August 16 and 17, 2010, and PCE was detected at concentrations of 6.46 µg/m³ and 1.04 µg/m³. In November 2010, samples collected from two sub-slab soil vapor probes installed at 99 Cynthia Drive detected PCE at concentrations of 1,540 µg/m³ and 6,530 µg/m³.

The maximum detected concentrations of contaminants of potential concern are listed by medium in the table below:

| | Maximum Concentration Detected | | |
|---|---|---|---|
| Analyte | Groundwater (µg/L) | Soil (mg/kg) | Soil Gas (µg/m$^3$) |
| PCE | 27,000 | 5.3 | 1,490,000 |
| TCE | 130 | 0.03 | <12,900 |
| cis-1,2-DCE | <40 | <0.04 | <9,520 |
| vinyl chloride | <50 | <0.05 | <6,130 |

The CVOC concentrations in groundwater are substantially above the drinking water standards (e.g., the Maximum Contaminant Level, or MCL, for PCE is 5 µg/L). The concentrations of PCE detected in soil vapor directly beneath the dry cleaner and adjacent units (subslab) are well above the Regional Water Board's 2013 *Environmental Screening Levels* (ESLs) [2] for potential vapor intrusion concerns at commercial facilities, which is 2,100 µg/m³. The concentrations of PCE detected in sub-slab soil vapor beneath several homes exceed the Regional Board's 2013 ESLs for potential vapor intrusion concerns at residential sites (210 µg/m³).

Based on the characterization studies completed to date, additional delineation of CVOCs in soil, soil vapor and groundwater is necessary.

8. **Interim Remedial Measures**: In October 1999, approximately 30 gallons of PCE were removed from the dry cleaning machine and transported off-Site to a disposal facility. In November 1999, approximately 30 cubic yards of soil were excavated from beneath the concrete floor slab and transported to the Altamont Landfill in March 2000.

In 2011, sub-slab depressurization (SSD) systems were installed as mitigation measures beneath the concrete floor of the Site (dry cleaner only) and two residential properties; 95 Cynthia Drive and 99 Cynthia Drive. The SSD systems were installed to prevent soil vapors from entering the structures; the systems are not remediating CVOC-contaminated soil and groundwater beneath the structures.

[2] See Regional Water Board webpage: http://www.waterboards.ca.gov/rwqcb2/water_issues/programs/esl.shtml

Additional interim remedial measures likely will be necessary to reduce the threat to water quality, public health, and the environment posed by the past chemical releases, and to provide a technical rationale behind the selection and design of final remedial measures.

9. **Nearby Sites**: The property at 1705 Contra Costa Boulevard, directly south of the shopping center, is currently a Chevron-branded gas station. Between 1972 and 1986, a former steel waste oil Underground Storage Tank (UST) leaked petroleum hydrocarbons and CVOCs into soil and groundwater at this property. A former dry cleaner used to operate in the southern part of the property; the dry cleaner used and leaked PCE into the subsurface. The property has a long and well-documented history of chemical use and unauthorized releases, including significant CVOC releases to soil and groundwater. Petroleum and CVOC releases at this property have commingled with the CVOC plume originating from the Site. This property is the subject of another proposed order directed to Chevron U.S.A., Inc. and others.

   A former Unocal gas station located at 1690 Contra Costa Boulevard is cross-gradient and east of the southern part of the main parking lot. This site, now a McDonald's restaurant, had confirmed releases of petroleum hydrocarbons and fuel oxygenates to soil and groundwater. A waste oil UST was removed from the site in 2000. The case (Regional Water Board Case No. 07-0450) was closed on September 27, 2010. It is possible that MTBE and other fuel-related constituents have migrated in groundwater from this property and onto the Site, but there is insufficient evidence to reach this conclusion at this time.

   A former gas station (now a Taco Bell restaurant, 1700 Contra Costa Boulevard) is located cross-gradient and approximately 150 feet southeast of the main parking lot. This property had historic releases of petroleum hydrocarbons. A waste oil UST was removed from the site in the past (date unknown). The case (Regional Water Board Case No. 07-0873) was closed on May 20, 2008. It is possible that fuel-related chemicals have migrated in groundwater from this property and beneath the Site, but there is insufficient evidence to reach this conclusion at this time.

   Minor concentrations of CVOCs were detected in the groundwater beneath a former gas station at 1521-1529 Contra Costa Boulevard, located directly north of the main parking lot and upgradient of CVOC detections in soil vapor and groundwater in the residential neighborhood north of the Gregory Village Shopping Center. The property, which was an automotive service and fueling station until 1977, has an unknown chemical release history. The case (Regional Water Board Case No. 07-0893) is currently open. It is possible that fuel-related chemicals have migrated in groundwater from this property and beneath the Site, but there is insufficient evidence to reach this conclusion at this time. Additional data will be necessary to confirm that CVOCs were not released during the historic service station operations.

   Two other dry cleaners, located at 1946 Contra Costa Boulevard (07S0088; Former Dutch Girl Cleaners and currently the "Hosanna Cleaners") and 2001 Contra Costa Boulevard, are upgradient of the Site. The 07S0088 case is inactive and approximately 2,000 feet south-southeast of the Site. It is highly unlikely, primarily because of the lateral distance between this property and the Site, that any PCE released on this property has migrated in

groundwater and commingled with the CVOC plume associated with the Site. The 2001 Contra Costa Boulevard property, currently named PH Bargain Cleaners, is located approximately 1,300 feet to the south, and is not listed as a case in the Water Board records.

Three former and current paint shops - 1725 Contra Costa Boulevard, 1720 Linda Drive, and 1942 Linda Drive - are located upgradient of the Chevron property. The 1725 Contra Costa Boulevard property, the former "Deen Pierce Paint Company (Case No. 07-0344 and closed on July 20, 1994), had a former UST which reportedly contained mineral spirits; the UST was removed on or about July 16, 1986. Regional Water Board staff does not have any information about the other two paint shops. There is insufficient evidence to determine whether constituents from these properties have commingled with contamination at the Site.

Former and current automotive maintenance facilities at 1855-1859 Contra Costa Boulevard are located approximately 1,100 feet upgradient of the Site. CVOCs and petroleum hydrocarbons were released at this site. The case (Regional Water Board Case No. 07-0022) is open. No evidence was presented to the Regional Water Board to indicate a groundwater plume from this property has migrated all the way to 1705 Contra Costa Boulevard (the "Chevron" property).

10. **Basin Plan**: The Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) is the Regional Water Board's master water quality control planning document. It designates beneficial uses and water quality objectives for waters of the State, including surface waters and groundwater, and also includes programs of implementation to achieve water quality objectives. The Basin Plan was duly adopted by the Regional Water Board and approved by the State Water Resources Control Board, U.S. EPA, and the Office of Administrative Law where required.

The potential beneficial uses of groundwater underlying and adjacent to the Site include:

a. Municipal and domestic water supply
b. Industrial process water supply
c. Industrial service water supply
d. Agricultural water supply

At present, there is no known use of the shallow groundwater zone underlying the Site for the above purposes. The vertical extent of groundwater contamination is unknown, and a future vertical delineation study is warranted. Because the Regional Water Board has insufficient information regarding the actual use of groundwater in the vicinity of the Site, Task 1 includes a requirement to survey for sensitive receptors. Similarly, the extent to which the shallow groundwater zone is connected to lower zones is not well-defined, necessitating the requirement in Task 1 to study potential vertical conduits and preferential pathways.

11. **State Water Board Policies**: State Water Board Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California," applies to this discharge and requires attainment of background levels of water quality, or the highest level of water quality which is reasonable if background levels of water quality cannot be restored. Cleanup levels other than background shall be consistent with the maximum benefit to the people of the State, not unreasonably affect present and anticipated beneficial uses of such water, and not result in exceedance of applicable water quality objectives. This order and its requirements are consistent with Resolution No. 68-16.

    State Water Board Resolution No. 92-49, "Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304," applies to this discharge. This order and its requirements are consistent with the provisions of Resolution No. 92-49, as amended.

12. **Other Board Policy**: Regional Water Board Resolution No. 89-39, "Sources of Drinking Water," defines potential sources of drinking water to include all groundwater in the region, with limited exceptions for areas of high TDS, low yield, or naturally-high contaminant levels. The groundwater at this Site is a potential source of drinking water.

13. **Preliminary Cleanup Goals**: The Dischargers will need to make assumptions about future cleanup standards for soil, soil vapor, and groundwater in order to determine the necessary extent of remedial investigation, interim remedial actions, and the draft remedial action plan. Pending the establishment of site-specific cleanup standards, the following preliminary cleanup goals shall be used:

    a. Groundwater: Applicable water quality objectives (e.g., the lower of primary/toxicity and secondary/taste and odor MCLs) or, in the absence of a chemical-specific objective, equivalent drinking water levels based on toxicity and taste and odor concerns.

    b. Soil and Soil Vapor: Applicable screening levels as compiled in the Regional Water Board's Environmental Screening Levels (ESLs) document or its equivalent. Soil and soil vapor screening levels are intended to address a full range of exposure pathways, including direct exposure, indoor air impacts, nuisance, and leaching to groundwater. For purposes of this subsection, the Discharger shall assume that groundwater is a potential source of drinking water.

14. **Basis for 13267 and 13304 Order**: Water Code section 13267 authorizes the Regional Water Board to require a person who has discharged, discharges or is suspected of having discharged or discharging, to furnish technical or monitoring program reports. The burden of the reports required by this Order bears a reasonable relationship to the need for the report and the benefits to be obtained (to characterize the extent of contamination, the associated risks to human health and the environment, and document success of remediation efforts). Water Code section 13304 authorizes the Regional Water Board to issue orders requiring a discharger to cleanup and abate waste where the discharger has caused or permitted waste to be discharged or deposited where it is or probably will be

discharged into waters of the State and creates or threatens to create a condition of pollution or nuisance. As discussed above, each of the dischargers has caused or permitted waste to be discharged or deposited, causing contamination of soil and groundwater. Contamination of groundwater creates and threatens to create conditions of pollution and nuisance.

15. **Cost Recovery**: Pursuant to Water Code section 13304, the Dischargers are hereby notified that the Regional Water Board is entitled to, and may seek reimbursement for, all reasonable costs actually incurred by the Regional Water Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this order.

16. **California Environmental Quality Act (CEQA)**: This action is an order to enforce the laws and regulations administered by the Regional Water Board. As such, this action is categorically exempt from the provisions of CEQA pursuant to Title 14 of the California Code of Regulations, section 15321.

17. **Safe Drinking Water Act:** It is the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. This order promotes that policy by requiring discharges to meet the lower of primary and secondary maximum contaminant levels designed to protect human health and ensure that water is safe for domestic use.

18. **Notification**: The Regional Water Board has notified the Dischargers and all interested agencies and persons of its intent under Water Code section 13304 to prescribe Site Cleanup Requirements for the discharge, and has provided them with an opportunity to submit their written comments.

19. **Public Hearing**: The Regional Water Board, at a public meeting, heard and considered all comments pertaining to the proposed site cleanup requirement for the Site.

**IT IS HEREBY ORDERED**, pursuant to sections 13267 and 13304 of the Water Code, that the Dischargers (or their agents, successors, or assigns) shall investigate, cleanup, and abate the effects described in the above findings as follows:

## A. PROHIBITIONS

1. The discharge of wastes or hazardous substances in a manner which will degrade water quality or adversely affect beneficial uses of waters of the State is prohibited.

2. Further significant migration of wastes or hazardous substances through subsurface transport to waters of the State is prohibited.
3. Activities associated with the subsurface investigation and cleanup which will cause significant adverse migration of wastes or hazardous substances are prohibited.

## B. TASKS

### 1. COMPLETION OF SENSITIVE RECEPTOR SURVEY AND CONDUIT STUDY

COMPLIANCE DATE: November 7, 2014

Submit a technical report acceptable to the Executive Officer documenting the completion of an up-to-date sensitive receptor survey and a conduit study. To evaluate the potential impact of the contamination on human health and the environment, the locations of sensitive receptors, including all water supply and irrigation wells, shall be identified. A door-to-door well survey shall be completed in the residential subdivisions to the north and west of the shopping plaza. A conduit study is needed to evaluate the role of subsurface utilities in the migration or accumulation of CVOCs in the subsurface.

### 2. PUBLIC PARTICIPATION PLAN

COMPLIANCE DATE: November 7, 2014

Submit a technical report acceptable to the Executive Officer to ensure adequate public participation will be undertaken at key steps in the remedial action process.

### 3. REMEDIAL INVESTIGATION/DATA GAP WORK PLAN

COMPLIANCE DATE: December 12, 2014

Submit a work plan acceptable to the Executive Officer to further evaluate source areas and to define the vertical and lateral extent of CVOCs in soil, soil vapor, and groundwater including, but not limited to: new vapor sampling at certain residential parcels and units within the shopping center; resampling of existing soil vapor probes; and, deeper groundwater investigation and sampling, both on- and off-Site.
The work plan shall specify investigation methods and a proposed time schedule.

### 4. COMPLETION OF REMEDIAL INVESTIGATION

COMPLIANCE DATE: 90 Days after Executive Officer approval of Task 3. Work Plan

Submit a technical report acceptable to the Executive Officer documenting completion of necessary tasks identified in the Task 2 work plan. The technical report shall define the vertical and lateral extent of pollution down to concentrations at or below typical cleanup standards for soil, soil vapor, and groundwater.

### 5. COMPLETION OF HUMAN HEALTH RISK ASSESSMENT

COMPLIANCE DATE: 90 Days after Executive Officer approval of Task 4.

Submit a technical report acceptable to the Executive Officer documenting the completion of an appropriate human health risk assessment.

**6. DRAFT REMEDIAL ACTION PLAN INCLUDING DRAFT CLEANUP STANDARDS**

COMPLIANCE DATE: 90 Days after Executive Officer approval of Task 5.

Submit a technical report acceptable to the Executive Officer containing:

a. Results of the remedial investigation;
b. Evaluation of the installed interim remedial actions;
c. Feasibility study evaluating alternative final remedial actions;
d. Risk assessment for current and post-cleanup exposures;
e. Recommended final remedial actions and cleanup standards; and,
f. Implementation tasks and time schedule.

Item c shall include projections of cost, effectiveness, benefits, and impact on public health, welfare, and the environment of each alternative action.

Items a through c shall be consistent with the guidance provided by Subpart F of the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR Part 300), CERCLA guidance documents with respect to remedial investigations and feasibility studies, Health and Safety Code section 25356.1(c), and State Board Resolution No. 92-49 as amended ("Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304").

Item e shall consider the preliminary cleanup goals for soil and groundwater identified in finding 13, and shall address the attainability of background levels of water quality (see finding 11).

**7. DELAYED COMPLIANCE**

If the Dischargers are delayed, interrupted, or prevented from meeting one or more of the completion dates specified for the above tasks, the Discharger shall promptly notify the Executive Officer and the Board may consider revision to this Order.

## C. PROVISIONS

1. **No Nuisance**: The storage, handling, treatment, or disposal of polluted soil or groundwater shall not create a nuisance as defined in Water Code section 13050(m).

2. **Good Operations and Maintenance (O&M)**: The Discharger shall maintain in good working order and operate as efficiently as possible any facility or control system installed to achieve compliance with the requirements of this Order.

3. **Cost Recovery**: The Dischargers shall be liable, pursuant to Water Code section 13304, to the Board for all reasonable costs actually incurred by the Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this Order. If the site addressed by this Order is enrolled in a State Board-managed reimbursement program, reimbursement shall be made pursuant to this Order and according to the procedures established in that program. Any disputes raised by the Dischargers over reimbursement amounts or methods used in that program shall be consistent with the dispute resolution procedures for that program.

4. **Access to Site and Records**: In accordance with Water Code section 13267(c), the Dischargers shall permit the Board or its authorized representative:

   a. Entry upon premises in which any pollution source exists, or may potentially exist, or in which any required records are kept, which are relevant to this Order.

   b. Access to copy any records required to be kept under the requirements of this Order.

   c. Inspection of any monitoring or remediation facilities installed in response to this Order.

   d. Sampling of any groundwater or soil which is accessible, or may become accessible, as part of any investigation or remedial action program undertaken by the Dischargers.

5. **Self-Monitoring Program**: The Dischargers shall comply with the Self-Monitoring Program as attached to this Order and as may be amended by the Executive Officer.

6. **Contractor/Consultant Qualifications**: All technical documents shall be signed by and stamped with the seal of a California registered geologist, a California certified engineering geologist, or a California registered civil engineer.

7. **Lab Qualifications**: All samples shall be analyzed by State-certified laboratories or laboratories accepted by the Board using approved EPA methods for the type of analysis to be performed. All laboratories shall maintain quality assurance/quality control (QA/QC) records for Board review. This provision does not apply to analyses that can only reasonably be performed on-Site (e.g., temperature).

8. **Document Distribution**: Copies of all correspondence, technical reports, and other documents pertaining to compliance with this Order shall be provided to the following agencies:

   - Regional Water Quality Control Board
   - City of Pleasant Hill
   - County of Contra Costa

   The Executive Officer may modify this distribution list as needed.

All reports submitted pursuant to this Order shall be submitted as electronic files in PDF format. All electronic files shall be submitted via the State Water Board's Geotracker website, email (only if the file size is less than 3 MB), or on CD.

9. **Reporting of Changed Owner or Operator**: The Dischargers shall file a technical report on any changes in Site occupancy or ownership associated with the property described in this Order.

10. **Reporting of Hazardous Substance Release**: If any hazardous substance is discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the State, the Dischargers shall report such discharge to the Board by calling (510) 622-2369 during regular office hours (Monday through Friday, 8:00 AM to 5:00 PM).

    A written report shall be filed with the Board within five working days. The report shall describe: the nature of the hazardous substance, estimated quantity involved, duration of incident, cause of release, estimated size of affected area, nature of effect, corrective actions taken or planned, schedule of corrective actions planned, and persons/agencies notified.

    This reporting is in addition to reporting to the Office of Emergency Services required pursuant to the Health and Safety Code.

12. **Periodic Site Cleanup Requirement Review**: The Board will review this Order periodically and may revise it when necessary. The Dischargers may request revisions and upon review the Executive Officer may recommend that the Board revise these requirements.

I, Bruce H. Wolfe, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on _____.

_____
Bruce H. Wolfe
Executive Officer

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FAILURE TO COMPLY WITH THE REQUIREMENTS OF THIS ORDER MAY SUBJECT YOU TO ENFORCEMENT ACTION, INCLUDING BUT NOT LIMITED TO: IMPOSITION OF ADMINISTRATIVE CIVIL LIABILITY UNDER WATER CODE SECTIONS 13268 OR 13350, OR REFERRAL TO THE ATTORNEY GENERAL FOR INJUNCTIVE RELIEF OR CIVIL OR CRIMINAL LIABILITY

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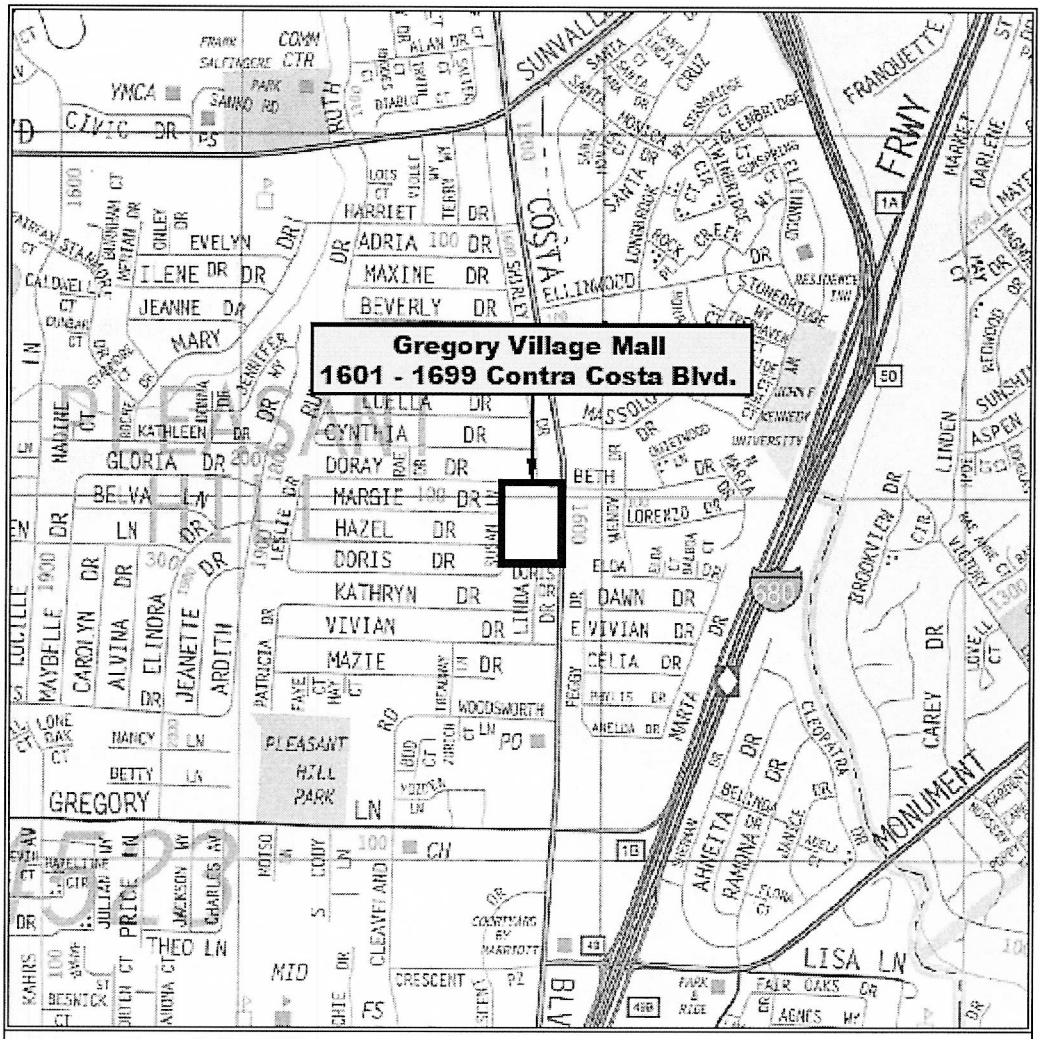
## Attachments

**Attachment A:** Site Map
**Attachment B:** Self-Monitoring Program

# Attachment A

Site Map




Reference: Thomas Brothers, 2003.

Notes:

1. All locations are approximate.

**Erler & Kalinowski, Inc.**

Site Location Map

Gregory Village Mall
Pleasant Hill, CA
April 2009
EKI A80035.00

Figure 1

# Attachment B

Self-Monitoring Program

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM for:

**GREGORY VILLAGE PARTNERS, L.P.,**
**VILLAGE BUILDERS, L.P.,**
**JOSEPH J. LEE,**
**GRACE M. LEE,**
**ALAN CHOI,**
**KAUEN CHOI,**
**WILLIAM O'MALLEY, and**
**FLOYD G. TAYLOR**

for the property located at:

**1643 CONTRA COSTA BOULEVARD**
**PLEASANT HILL, CONTRA COSTA COUNTY**

1. **Authority and Purpose**: The Regional Water Board requests the technical reports required in this Self-Monitoring Program (SMP) pursuant to Water Code sections 13267 and 13304. This Self-Monitoring Program is intended to document compliance with Regional Water Board Order No. R2-2014-XXX (Site Cleanup Requirements).

2. **Monitoring**: The Dischargers shall measure groundwater elevations quarterly in all monitoring wells, and shall collect and analyze representative samples of groundwater according to the following schedule:

| Well # | Sampling Frequency | Analyses | Well # | Sampling Frequency | Analyses |
|---|---|---|---|---|---|
| MW-1 | A | 8260B | MW-7 | SA | 8260B |
| MW-2 | A | 8260B | MW-8 | SA | 8260B |
| MW-3 | SA | 8260B | MW-9 | SA | 8260B |
| MW-4 | SA | 8260B | MW-10 | SA | 8260B |
| MW-5 | A | 8260B | MW-11 | SA | 8260B |
| MW-6 | A | 8260B | | | |

Key: SA = Semi-Annually
8260B = EPA Method 8260B or equivalent
A = Annually

The Dischargers shall sample any new monitoring or extraction wells quarterly and analyze groundwater samples for the same constituents as shown in the above table. The Dischargers may propose changes in the above table; any proposed changes are subject to Executive Officer approval.

3. **Semi-Annual and Annual Monitoring Reports**: The Dischargers shall submit semi-annual monitoring reports to the Regional Water Board no later than 45 days following the sampling event. The reports shall include:

   a. Transmittal Letter: The transmittal letter shall discuss any violations during the reporting period and actions taken or planned to correct the problem. The letter shall be signed by the Discharger's principal executive officer or his/her duly authorized representative, and shall include a statement by the official, under penalty of perjury, that the report is true and correct to the best of the official's knowledge.

   b. Groundwater Elevations: Groundwater elevation data shall be presented in tabular form, and a groundwater elevation map shall be prepared for each monitored water-bearing zone. Historical groundwater elevations shall be included in the fourth quarterly report each year.

   c. Groundwater Analyses: Groundwater sampling data shall be presented in tabular form, and a map shall be prepared that includes the analytical data for one or more key contaminants for each monitored water-bearing zone, as appropriate. The report shall indicate the analytical method used, detection limits obtained for each reported constituent, and a summary of QA/QC data. Historical groundwater sampling results shall be included in the fourth quarterly report each year. The report shall describe any significant increases in contaminant concentrations since the last report, and any measures proposed to address the increases. Supporting data, such as lab data sheets, need not be included (however, see record keeping - below).

   d. Groundwater Extraction: If applicable, the report shall include groundwater extraction results in tabular form, for each extraction well and for the Site as a whole, expressed in gallons per minute and total groundwater volume for the quarter. The report shall also include contaminant removal results, from groundwater extraction wells and from other remediation systems (e.g., soil vapor extraction), expressed in units of chemical mass per day and mass for the quarter. Historical mass removal results shall be included in the fourth quarterly report each year.

   e. Status Report: The quarterly report shall describe relevant work completed during the reporting period (e.g., site investigation, interim remedial measures) and work planned for the following quarter.

4. **Violation Reports**: If the Dischargers violate requirements in the Site Cleanup Requirements, then the Dischargers shall notify the Regional Board office by telephone as soon as practicable once the Dischargers have knowledge of the violation. Regional Water Board staff may, depending on violation severity, require the Dischargers to submit a separate technical report on the violation within five working days of telephone notification.

5. **Other Reports**: The Dischargers shall notify the Regional Water Board in writing prior to any Site activities, such as construction or underground tank removal, which have the potential to cause further migration of contaminants or which would provide new opportunities for site investigation.

6. **Record Keeping**: The Dischargers or their agents shall retain data generated for the above reports, including lab results and QA/QC data, for a minimum of six years after origination and shall make them available to the Regional Water Board upon request. The six-year period of retention shall be extended during the course of any unresolved litigation regarding this discharge or when requested by the Regional Water Board.

7. **SMP Revisions**: Revisions to this SMP may be ordered by the Executive Officer, either on his/her own initiative or at the request of the Dischargers. Prior to making SMP revisions, the Executive Officer will consider the burden, including costs, of associated self-monitoring reports relative to the benefits to be obtained from these reports.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

TENTATIVE ORDER

ADOPTION OF INITIAL SITE CLEANUP REQUIREMENTS for:

**CHEVRON U.S.A. INC.,**
**MB ENTERPRISES, INC.,**
**PHILIP M. LEHRMAN,**
**JANE A. LEHRMAN, and**
**MARJORIE P. ROBINSON**

for the property located at:

**1705 CONTRA COSTA BOULEVARD**
**PLEASANT HILL, CONTRA COSTA COUNTY**

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter "Regional Water Board"), finds that:

1. **Site Location and Description**: The 0.48-acre property (Assessor's Parcel No. 150-103-016-5) is a rectangular-shaped, commercial parcel (the "Site"). The Site is located in the Gregory Gardens area of Pleasant Hill, California, and is currently developed with a Chevron-branded gasoline service station. The Site is bounded by Contra Costa Boulevard to the east, Doris Drive to the north, Linda Drive to the west, and a parking lot and commercial building to the south. The Gregory Village Shopping Center and its main parking lot are located directly north of Doris Drive.

   Site improvements include a small station/convenience store, car wash, three underground storage tanks ("USTs") for automotive fuels, product dispensers and underground piping, underground pavements and landscape areas. A dry cleaner once occupied the southern portion of the Site.

2. **Site History**: An automotive fueling facility has existed on the northern parcel for over 60 years. Standard Oil operated on the northern parcel from 1950 until 1977. The successor to Standard Oil, Chevron U.S.A. Inc. (herein referred to as "Chevron"), operated at the Site from 1977 until 2003. Automotive repairs were undertaken on the Site from approximately 1950 to 1987.

   In 1971, two commercial parcels, a northern lot at 1705 Contra Costa Boulevard (Assessor's Parcel No. 150-103-01) and a southern lot at 1709 Contra Costa Boulevard (Assessor's Parcel No. 103-012-012) were merged to form one parcel, which was then split to create a larger northern parcel to facilitate the construction of an automotive maintenance and repair building (constructed in 1972). Both of these properties were owned jointly by the Lehrmans and Robinsons between 1965 and late 1986. A dry cleaner

had reportedly operated at 1709 Contra Costa Boulevard since the mid-1950s. According to information provided by the Contra Costa County Assessor's office, prior to the construction of the new service station building in 1972, the common (central) property line between 1705 and 1709 Contra Costa Boulevard was shifted to the south approximately 35 feet to create a bigger lot. The southern part of the new building, along with a steel waste oil UST, were then located in a section over the original dry cleaner property.

In late December 1986, Chevron purchased both 1705 and 1709 Contra Costa Boulevard, and sometime in 1987 merged the two lots into one parcel. According to available building permits and inspection reports, by late 1987, the former dry cleaner building had been removed, and in early 1988 Chevron constructed the car wash. Chevron sold the Site in March 2003 to MB Enterprises, Inc., the current property owner and gas station operator.

Unauthorized releases of volatile organic compounds (VOCs) and related constituents, including chlorinated volatile organic compounds (CVOCs), chiefly tetrachloroethylene (PCE) and trichloroethylene (TCE), and various petroleum hydrocarbons (e.g., benzene, toluene, ethylbenzene, xylenes, etc.), were documented at the Site, mainly from former leaking USTs. It is common knowledge that PCE and TCE have been used at automotive repair stations for many years to clean brakes, carburetors, and fuel injection systems and to degrease engines and other parts, and oftentimes USTs were used to store waste oil and related products.[1] [2] [3] PCE is also commonly associated with dry cleaners.

**Land Ownership:** According to information provided by Chevron, the Site was owned by several different individuals and/or businesses since about 1950, as follows:

1950 to 1960

- Gregory Village, Inc. (a business that no longer exists with no agent for service of process)

1960 to 1986

- Phil Heraty Organization (a business that no longer exists with no agent for service of process)
- Philip and Jane Lehrman
- Ned and Marjorie P. Robinson (Mr. Robinson is deceased)
- Merle D. Hall Company (no clear evidence of property ownership)
- Max W. Parker (no clear evidence of property ownership)

[1] USEPA, November 1993, Economic Impact Analysis of the Halogenated Solvent Cleaning NESHAP, EPA-453/D-93-058.

[2] State of California Environmental Protection Agency/Air Resources Board, June 1997, Status Report, Perchloroethylene Needs Assessment for Automotive Consumer Products.

[3] State of California Environmental Protection Agency, November 2006, Automotive Aerosol Cleaning Products: Low-VOC, Low Toxicity Alternatives, Report prepared by Institute for Research and Technical Assistance for the Department of Toxic Substances Control and City of Santa Monica.

December 1986 to March 2003

- Chevron U.S.A. Inc.

March 2003 to Present

- MB Enterprises, Inc. (current property owner and gas station operator)

3. **Named Dischargers**: Philip M. Lehrman, Jane A. Lehrman, and Marjorie P. Robinson are named as dischargers because they owned the entire property during the time when CVOCs were discharged, had knowledge of the discharge and/or the activities that caused the discharge, and had the legal ability to prevent the discharge.

   Gregory Village, Inc. and Phil Heraty Organization are not being named as dischargers because these businesses no longer exist, and the California Secretary of State has no record for an agent for service of process on file for either company. Merle D. Hall Company and Max W. Parker are not being named as dischargers because there is no clear evidence of their ownership of Site 2.

   Chevron is named as a discharger with respect to the discharge and migration of CVOCs from a former waste oil tank and the former dry cleaner, both located on the Site. First, with respect to CVOC releases from a former on-Site leaking waste oil UST, Chevron is named as a discharger because of substantial evidence that it discharged CVOCs to soil and groundwater at the Site. This evidence includes Standard Oil/Chevron's operation of the waste oil UST for many years, and the pattern of CVOC and petroleum contamination subsequently detected in the vicinity of the former waste oil UST. As of at least 1986, Chevron knew of the discharge or the activities that caused the discharge and had the legal ability to prevent the discharge.

   Second, with respect to CVOC releases from the former on-Site dry cleaner, Chevron is a discharger because it owned the property during the time of a discharge of CVOCs to soil and groundwater, had knowledge of the discharge and/or the activities that caused the discharge, and had the legal ability to control the discharge.

   MB Enterprises, Inc. is named as a discharger because it is the current owner of the property on which there is an ongoing discharge of pollutants, has knowledge of the discharge, and the ability to control the discharge.

   Regional Water Board staff was unable to locate a former operator of the dry cleaner, Charles Grant Bostwick and Joanne Bostwick. Regional Water Board staff understands that former operators of the dry cleaner, Morris and Genoise Jorgenson, are also deceased.

   If additional information is submitted indicating other parties caused or permitted any waste to be discharged on the Site where it entered or could have entered waters of the State, the Regional Water Board will consider adding those parties to this order. Collectively the above identified responsible parties are referred as Dischargers.

4. **Regulatory Status**: The Site is currently not subject to a Regional Water Board order.

5. **Site Hydrogeology**: The Site is located within the Ygnacio Valley Groundwater Basin, a structural depression between the Berkeley Hills to the west and the Diablo Range to the east. The basin sediments consist of thick Quaternary-age alluvial and floodplain deposits, generally comprised of unconsolidated to partially consolidated, discontinuous layers of silt, clay, sand, and gravel. The local topography is gently tilted to the north and northwest.

   From June 1989 through May 2013, groundwater levels in various monitoring wells associated with the Site ranged from a low of approximately 20 feet below the ground surface (bgs) to a high of approximately six feet bgs. The lowest groundwater level recorded coincides with a time when Chevron was pumping and treating polluted groundwater. Groundwater flow direction in the shallow zone has been mainly to the north at an average gradient of approximately 0.005 feet per foot.

6. **Hydrology:** The closest major surface water bodies are Grayson Creek, located approximately 2,000 feet to the west, and Walnut Creek, located approximately 2,000 feet to the east. No municipal drinking water supply wells are known to exist within a two-mile radius of the site. Shallow "backyard" irrigation wells are common on residential parcels in Pleasant Hill, but a door-to-door domestic well survey has not been completed in the residential subdivision downgradient of the Site.

7. **Remedial Investigation**: Numerous soil, soil vapor, and groundwater samples collected and analyzed during approximately 26 years of environmental investigation and cleanup activities at the Site have detected a variety of chemicals, several of which are very toxic to human health. The data indicates CVOCs are present in groundwater at levels exceeding the maximum contaminant levels (MCLs) [4] beneath and downgradient (north and northwest) of the Site, and have likely commingled with another CVOC groundwater plume associated with the former P&K Cleaners location north of the Site

   Petroleum and chlorinated VOCs were detected in soil, soil vapor, and shallow groundwater within the boundaries of the Site, adjacent to the Site, and within the Gregory Village Shopping Center parcel downgradient of the Site.

   The Site was an open environmental case from 1986 to early 2005. Chevron indicated the Site did not pose a threat to human health, groundwater and the environment. Based on the findings and analysis in environmental assessment reports from Chevron, groundwater contamination appeared to be localized and adequately characterized. Chevron requested closure of the UST case. Based on the data presented, the Regional Water Board concurred and closed the fuel UST case on January 14, 2005. All groundwater monitoring wells, with the exception of off-Site well EA-5, were destroyed in March 2005.

   An October 31, 2005, letter from Cambria Environmental Technology, Inc. about the destruction of monitoring wells stated, *As part of approved case closure, one sentinel well, EA-5, will remain active and sampled annually for petroleum hydrocarbons and halogenated volatile organic compounds.* EA-5 has been monitored on an annual basis for

[4] The drinking water standard for PCE and TCE, known as the maximum contaminant level, or MCL, is 5 µg/L.

the past eight years. The maximum historic PCE and TCE detections in groundwater samples from off-Site well EA-5 have been 52 µg/L, and 84 µg/L, respectively.[5]

The maximum detected concentrations of contaminants of potential concern are listed by medium in the table below:

| Analyte | Maximum Concentration Detected | | |
|---|---|---|---|
| | Groundwater (µg/L) | Soil (mg/kg) | Soil Gas (µg/m$^3$) |
| PCE | 5,000 | 20 | 3,247,700 |
| TCE | 3,600 | 1.4 | 2,100,000 |
| cis-1,2-DCE | 2,900 | 0.45 | 410,000 |
| vinyl chloride | 910 | <48 | <5,200 |
| benzene | 12,000 | 2.2 | 520,733 |
| TPH-gasoline | 110,000 | 80 | 916,667 |

The CVOC concentrations in groundwater are substantially above the drinking water standards (e.g., the Maximum Contaminant Level, or MCL, for PCE is 5 µg/L). The CVOC concentrations in soil vapor are well above risk-based screening levels (e.g., Regional Water Board's ESLs[6]) for potential vapor intrusion concerns at commercial facilities (e.g., ESL is 2,100 µg/m$^3$), and pose a direct threat to indoor air.

The distribution and types of contaminants in groundwater downgradient of the Site generally mirror the contaminants found in soil, soil vapor and groundwater directly beneath the Site. The data demonstrates that CVOC concentrations in groundwater are generally higher near the former steel waste oil UST, then generally decrease in concentrations as the plume expanded to the north and attenuated, indicating the pollution in groundwater migrated and likely commingled with the P&K Cleaners plume.

Nevertheless, there are several data gaps in regards to the vertical and lateral distribution of CVOCs in soil, soil vapor and groundwater, both on-Site and off-Site. Additional soil, soil vapor and groundwater characterization studies, and a human health risk assessment, are warranted.

8. **Interim Remedial Measures**: The first-generation fueling facilities were removed and replaced in 1971-1972. The second-generation fueling facilities were removed and replaced in 1987-1988. A steel waste oil UST installed in 1972 was removed in 1986. There are no records to indicate contaminated soils were excavated and hauled away during any of the waste oil UST removal and replacement activities.

Between August 1991 and July 1996, pumping, treatment, and permitted disposal of contaminated groundwater was conducted at the Site as an interim remedial measure.

[5] These concentrations are much lower than on-Site concentrations of CVOCs and in groundwater samples collected more recently and to the west of EA-5 (as discussed below), indicating EA-5 is probably not located in an appropriate area to function as a "sentinel" well.

[6] See Regional Water Board webpage: http://www.waterboards.ca.gov/rwqcb2/water_issues/programs/esl.shtml

Approximately 1,900,000 gallons of polluted groundwater were extracted, treated, and discharged to the sanitary sewer system. Chevron reported removal of approximately 12 pounds of Total Petroleum Hydrocarbons and 41 pounds of CVOCs. Chevron reported that the pump and treat system did little to reduce the high concentrations of CVOCs dissolved in groundwater.

In 1995, as part of site renovation activities, trench liners, pea gravel, and product piping were removed, and shallow soil contaminated with petroleum hydrocarbons was excavated to approximately three feet bgs.

Additional interim remedial measures likely will be necessary to reduce the threat to water quality, public health, and the environment posed by the past chemical releases, and to provide a technical rationale behind the selection and design of final remedial measures.

9. **Nearby Sites**: A commercial property to the north, 1601-1699 Contra Costa Boulevard and currently the Gregory Village Shopping Center, is directly downgradient of the Site. A dry cleaner that used PCE in their operations existed in one of the tenant suites within the plaza (with a property address of 1643 Contra Costa Boulevard). CVOC releases from this former dry cleaner are well-documented (Regional Water Board Case No. 07S0132). This property is the subject of another proposed order directed to Gregory Village Partners, L.P., and others.

A former Unocal gas station located at 1690 Contra Costa Boulevard is cross-gradient and approximately 150 feet northeast of the Site. This site, now a McDonald's restaurant, had confirmed releases of petroleum hydrocarbons and fuel oxygenates to soil and groundwater. A waste oil UST was removed from the site in 2000. The case (Regional Water Board Case No. 07-0450) was closed on September 27, 2010. There is insufficient evidence to determine whether MTBE and other fuel-related constituents from this former gas station property have commingled with contamination at the Site.

A former gas station (now a Taco Bell restaurant), located at 1700 Contra Costa Boulevard, is cross-gradient and approximately 100 feet east of the Site., This property had historic releases of petroleum hydrocarbons. A waste oil UST was removed from the site in the past (date unknown). The case (Regional Water Board Case No. 07-0873) was closed on May 20, 2008. There is insufficient evidence to determine whether fuel-related constituents from this property have commingled with contamination at the Site.

Minor concentrations of CVOCs were detected in the groundwater beneath a former gas station at 1521-1529 Contra Costa Boulevard, approximately 600 feet north of the Site and upgradient of CVOC detections in soil vapor and groundwater in the residential neighborhood north of the Gregory Village Shopping Center. The property, which was an automotive service and fueling station until 1977, has an unknown chemical release history. The case (Regional Water Board Case No. 07-0893) is currently open. There is insufficient evidence to determine whether fuel-related constituents from this former gas station property have commingled with contamination at the Site or migrated beneath the adjacent residential neighborhood. Additional data will be necessary to confirm that CVOCs were not released during the historic service station operations.

Two other dry cleaners, located at 1946 Contra Costa Boulevard (07S0088; Former Dutch Girl Cleaners and currently the "Hosanna Cleaners") and 2001 Contra Costa Boulevard, are upgradient of the Site. The 07S0088 case is inactive and approximately 2,000 feet southeast of the Site. Because of the lateral distance between this property and the Site, it is unlikely that any PCE released on this property migrated in groundwater and commingled with the CVOC plume associated with the Site. The 2001 Contra Costa Boulevard property, currently PH Bargain Cleaners, is located approximately 1,300 feet to the south and is not listed as a case in the Water Board's records.

Former and current automotive maintenance facilities at 1855-1859 Contra Costa Boulevard are located approximately 650 feet upgradient (south) of the Site. CVOCs were released at this site. The case (Regional Water Board Case No. 07-0022) is open. There is insufficient evidence to determine whether fuel-related constituents from this property have commingled with contamination at the Site.

Three current and former paint shops - 1725 Contra Costa Boulevard, 1720 Linda Drive, and 1942 Linda Drive - are located upgradient of the Site. The 1725 Contra Costa Boulevard property, the former "Deen Pierce Paint Company (Case No. 07-0344 and closed on July 20, 1994), had a former UST which reportedly contained mineral spirits; the UST was removed on or about July 16, 1986. Regional Water Board staff does not have any information about the other two paint shops. There is insufficient evidence to determine whether constituents from these properties have commingled with contamination at the Site.

10. **Basin Plan**: The Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) is the Regional Water Board's master water quality control planning document. It designates beneficial uses and water quality objectives for waters of the State, including surface waters and groundwater, and also includes programs of implementation to achieve water quality objectives. The Basin Plan was duly adopted by the Regional Water Board and approved by the State Water Resources Control Board, U.S. EPA, and the Office of Administrative Law where required.

The potential beneficial uses of groundwater underlying and adjacent to the Site include:

a. Municipal and domestic water supply
b. Industrial process water supply
c. Industrial service water supply
d. Agricultural water supply

At present, there is no known use of the shallow groundwater zone underlying the Site and immediate area for the above purposes. The vertical extent of groundwater contamination is unknown, and a future vertical delineation study is warranted. Because the Regional Water Board has insufficient information regarding the actual use of groundwater in the vicinity of the Site, Task 1 includes a requirement to survey for sensitive receptors. Similarly, the extent to which the shallow groundwater zone is connected to lower zones is not well-defined, necessitating the requirement in Task 1 to study potential vertical conduits and preferential pathways.

11. **State Water Board Policies**: State Water Board Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California," applies to this discharge and requires attainment of background levels of water quality, or the highest level of water quality which is reasonable if background levels of water quality cannot be restored. Cleanup levels other than background shall be consistent with the maximum benefit to the people of the State, not unreasonably affect present and anticipated beneficial uses of such water, and not result in exceedance of applicable water quality objectives. This order and its requirements are consistent with Resolution No. 68-16.

    State Water Board Resolution No. 92-49, "Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304," applies to this discharge. This order and its requirements are consistent with the provisions of Resolution No. 92-49, as amended.

12. **Other Board Policy**: Regional Water Board Resolution No. 89-39, "Sources of Drinking Water," defines potential sources of drinking water to include all groundwater in the region, with limited exceptions for areas of high TDS, low yield, or naturally-high contaminant levels. The groundwater at this Site is a potential source of drinking water.

13. **Preliminary Cleanup Goals**: The Dischargers will need to make assumptions about future cleanup standards for soil, soil vapor, and groundwater in order to determine the necessary extent of remedial investigation, interim remedial actions, and the draft remedial action plan. Pending the establishment of site-specific cleanup standards, the following preliminary cleanup goals shall be used for these purposes:

    a. Groundwater: Applicable water quality objectives (e.g., lower of primary (toxicity) and secondary (taste and odor) maximum contaminant levels, or MCLs) or, in the absence of a chemical-specific objective, equivalent drinking water levels based on toxicity and taste and odor concerns.

    b. Soil and Soil Vapor: Applicable screening levels as compiled in the Regional Water Board's draft Environmental Screening Levels (ESLs) document or its equivalent. Soil and soil vapor screening levels are intended to address a full range of exposure pathways, including direct exposure, indoor air impacts, nuisance, and leaching to groundwater. For purposes of this subsection, the Dischargers must assume that groundwater is a potential source of drinking water.

14. **Basis for 13267 and 13304 Order**: Water Code section 13267 authorizes the Regional Water Board to require a person who has discharged, discharges or is suspected of having discharged or discharging, to furnish technical or monitoring program reports. The burden of the reports required by this Order bears a reasonable relationship to the need for the report and the benefits to be obtained (to characterize the extent of contamination, the associated risks to human health and the environment, and document success of remediation efforts).

Water Code section 13304 authorizes the Regional Water Board to issue orders requiring dischargers to cleanup and abate waste where the dischargers have caused or permitted waste to be discharged or deposited where it is or probably will be discharged into waters of the State and creates or threatens to create a condition of pollution or nuisance. As discussed above, each of the dischargers has caused or permitted waste to be discharged or deposited, causing contamination of groundwater. Contamination of groundwater creates and threatens to create conditions of pollution and nuisance.

15. **Cost Recovery**: Pursuant to Water Code section 13304, the Dischargers are hereby notified that the Regional Water Board is entitled to, and may seek reimbursement for, all reasonable costs actually incurred by the Regional Water Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this order.

16. **California Environmental Quality Act (CEQA)**: This action is an order to enforce the laws and regulations administered by the Regional Water Board. As such, this action is categorically exempt from the provisions of CEQA pursuant to Title 14 of the California Code of Regulations, section 15321.

17. **Safe Drinking Water Act:** It is the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. This order promotes that policy by requiring discharges to meet the lower of primary and secondary maximum contaminant levels designed to protect human health and ensure that water is safe for domestic use.

18. **Notification**: The Regional Water Board has notified the Dischargers and all interested agencies and persons of its intent under Water Code section 13304 to prescribe Site Cleanup Requirements for the discharge, and has provided them with an opportunity to submit their written comments.

19. **Public Hearing**: The Regional Water Board, at a public meeting, heard and considered all comments pertaining to the proposed site cleanup requirement for the Site.

**IT IS HEREBY ORDERED**, pursuant to sections 13267 and 13304 of the Water Code, that the Dischargers (or its agents, successors, or assigns) shall investigate, cleanup and abate the effects described in the above findings as follows:

## A. PROHIBITIONS

1. The discharge of wastes or hazardous substances in a manner which will degrade water quality or adversely affect beneficial uses of waters of the State is prohibited.

2. Further significant migration of wastes or hazardous substances through subsurface transport to waters of the State is prohibited.

3. Activities associated with the subsurface investigation and cleanup which will cause significant adverse migration of wastes or hazardous substances are prohibited.

## B. TASKS

### 1. COMPLETION OF SENSITIVE RECEPTOR SURVEY AND CONDUIT STUDY

COMPLIANCE DATE: November 7, 2014

Submit a technical report acceptable to the Executive Officer documenting completion of an up-to-date sensitive receptor survey and a conduit study. To evaluate the potential impact of the contamination on human health and the environment, the locations of sensitive receptors, including water supply and irrigation wells, shall be identified. A conduit study is needed to evaluate the role of subsurface utilities in the migration or accumulation of CVOCs in the subsurface.

### 2. PUBLIC PARTICIPATION PLAN

COMPLIANCE DATE: November 7, 2014
Submit a technical report acceptable to the Executive Officer to ensure adequate public participation will be undertaken at key steps in the remedial action process.

### 3. REMEDIAL INVESTIGATION/DATA GAP WORK PLAN

COMPLIANCE DATE: December 12, 2014

Submit a work plan acceptable to the Executive Officer to further evaluate all source areas and to define the vertical and lateral extent of CVOCs in soil, soil vapor, and groundwater. The work plan shall specify investigation methods and a proposed time schedule.

### 4. COMPLETION OF REMEDIAL INVESTIGATION

COMPLIANCE DATE: 90 Days after Executive Officer approval of Task 3. Work Plan

Submit a technical report acceptable to the Executive Officer documenting completion of necessary tasks identified in the Task 2 work plan. The technical report shall define the vertical and lateral extent of pollution down to concentrations at or below typical cleanup standards for soil, soil vapor, and groundwater.

### 5. COMPLETION OF HUMAN HEALTH RISK ASSESSMENT

COMPLIANCE DATE: 90 Days after Executive Officer approval of Task 4.

Submit a technical report acceptable to the Executive Officer documenting the completion of an appropriate human health risk assessment.

**6. DRAFT REMEDIAL ACTION PLAN INCLUDING DRAFT CLEANUP STANDARDS**

COMPLIANCE DATE: 90 Days after Executive Officer approval of Task 5.

Submit a technical report acceptable to the Executive Officer containing:

a. Results of the remedial investigation
b. Evaluation of the installed interim remedial actions measures
c. Feasibility study evaluating alternative final remedial actions
d. Risk assessment for current and post-cleanup exposures
e. Recommended final remedial actions and cleanup standards
f. Implementation tasks and time schedule

Item c shall include projections of cost, effectiveness, benefits, and impact on public health, welfare, and the environment of each alternative action.

Items a through c shall be consistent with the guidance provided by Subpart F of the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR Part 300), CERCLA guidance documents with respect to remedial investigations and feasibility studies, Health and Safety Code section 25356.1(c), and State Water Board Resolution No. 92-49 as amended ("Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304").

Item e shall consider the preliminary cleanup goals for soil and groundwater identified in finding 13 and shall address the attainability of background levels of water quality (see finding 11).

**7. DELAYED COMPLIANCE**

If the Dischargers are delayed, interrupted, or prevented from meeting one or more of the completion dates specified for the above tasks, the Dischargers shall promptly notify the Executive Officer and the Regional Water Board may consider revision to this Order.

## C. PROVISIONS

1. **No Nuisance**: The storage, handling, treatment, or disposal of polluted soil or groundwater shall not create a nuisance as defined in Water Code section 13050(m).

2. **Good Operations and Maintenance (O&M)**: The Dischargers shall maintain in good working order and operate as efficiently as possible any facility or control system installed to achieve compliance with the requirements of this Order.

3. **Cost Recovery**: The Dischargers are liable, pursuant to Water Code section 13304, to the Regional Water Board for all reasonable costs actually incurred by the Regional Water Board to investigate unauthorized discharges of waste and to oversee cleanup of

such waste, abatement of the effects thereof, or other remedial action, required by this Order. If the site addressed by this Order is enrolled in a State Water Board-managed reimbursement program, reimbursement shall be made pursuant to this Order and according to the procedures established in that program. Any disputes raised by the Dischargers over reimbursement amounts or methods used in that program shall be consistent with the dispute resolution procedures for that program.

4. **Access to Site and Records**: In accordance with Water Code section 13267(c), the Dischargers shall permit the Regional Water Board or its authorized representative:

    a. Entry upon premises in which any pollution source exists, or may potentially exist, or in which any required records are kept, which are relevant to this Order.

    b. Access to copy any records required to be kept under the requirements of this Order.

    c. Inspection of any monitoring or remediation facilities installed in response to this Order.

    d. Sampling of any groundwater or soil which is accessible, or may become accessible, as part of any investigation or remedial action program undertaken by the Dischargers.

5. **Self-Monitoring Program**: The Dischargers shall comply with the Self-Monitoring Program as may be established by the Executive Officer.

6. **Contractor/Consultant Qualifications**: All technical documents shall be signed by and stamped with the seal of a California registered geologist, a California certified engineering geologist, or a California registered civil engineer.

7. **Lab Qualifications**: All samples shall be analyzed by State-certified laboratories or laboratories accepted by the Regional Water Board using approved EPA methods for the type of analysis to be performed. All laboratories shall maintain quality assurance/quality control records for Regional Water Board review. This provision does not apply to analyses that can only reasonably be performed on-Site (e.g., temperature).

8. **Document Distribution**: Copies of all correspondence, technical reports, and other documents pertaining to compliance with this Order shall be provided to the following agencies:
    - Regional Water Quality Control Board
    - City of Pleasant Hill
    - County of Contra Costa

    The Executive Officer may modify this distribution list as needed.

All reports submitted pursuant to this Order shall be submitted as electronic files in PDF format. All electronic files shall be submitted via the State Water Board's Geotracker website, email (only if the file size is less than 3 megabytes), or on CD.

9. **Reporting of Changed Owner or Operator**: The Dischargers shall file a technical report on any changes in Site occupancy or ownership associated with the property described in this Order.

10. **Reporting of Hazardous Substance Release**: If any hazardous substance is discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the State, the Dischargers shall report such discharge to the Regional Water Board by calling (510) 622-2369 during regular office hours (Monday through Friday, 8:00 AM to 5:00 PM).

    A written report shall be filed with the Regional Water Board within five working days. The report shall describe: the nature of the hazardous substance, estimated quantity involved, duration of incident, cause of release, estimated size of affected area, nature of effect, corrective actions taken or planned, schedule of corrective actions planned, and persons/agencies notified.

    This reporting is in addition to reporting to the Office of Emergency Services required pursuant to the Health and Safety Code.

11. **Periodic SCR Review**: The Regional Water Board will review this Order periodically and may revise it when necessary. The Dischargers may request revisions and upon review the Executive Officer may recommend that the Regional Water Board revise these requirements.

I, Bruce H. Wolfe, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on _____.

_____
Bruce H. Wolfe
Executive Officer

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FAILURE TO COMPLY WITH THE REQUIREMENTS OF THIS ORDER MAY SUBJECT YOU TO ENFORCEMENT ACTION, INCLUDING BUT NOT LIMITED TO: IMPOSITION OF ADMINISTRATIVE CIVIL LIABILITY UNDER WATER CODE SECTIONS 13268 OR 13350, OR REFERRAL TO THE ATTORNEY GENERAL FOR INJUNCTIVE RELIEF OR CIVIL OR CRIMINAL LIABILITY

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**Attachments**
**Attachment A:** Site Map

# Attachment A

Site Map

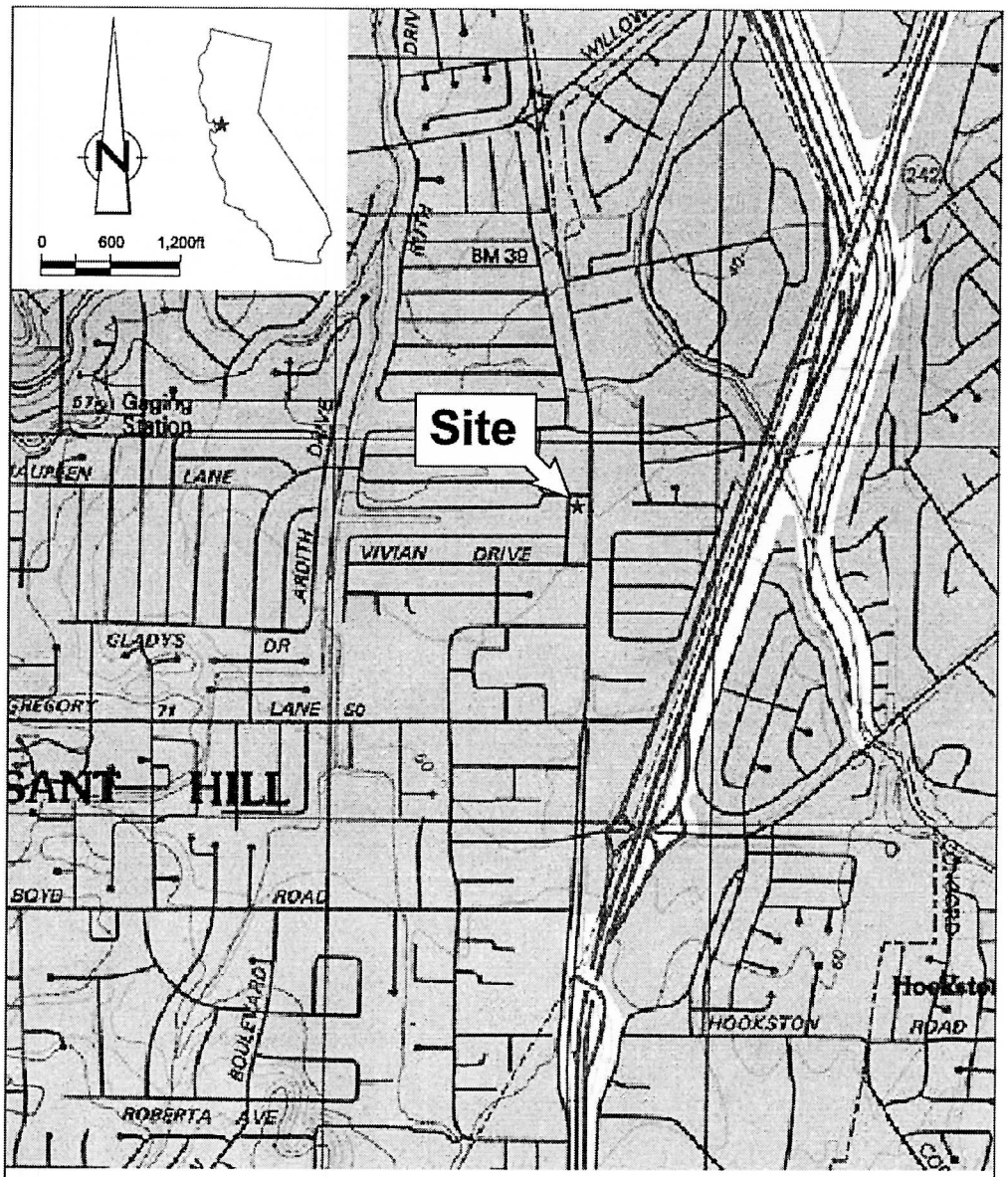


Figure 1

VICINITY MAP
CHEVRON SERVICE STATION 9-6817
1705 CONTRA COSTA BOULEVARD
*Pleasant Hill, California*

I:\CHEVRON\3117–\311741 9-6817 PLEASANT HILL\311741-FIGURES\311741_EM001-VMAP.DWG

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD**
**SAN FRANCISCO BAY REGION**

**July 2, 2014**
**File Nos. 07S0132 (KEB) and 07S0204 (KEB)**

**Cleanup Team Staff Report**

**Basis for Recommendation to Adopt Initial Site Cleanup Requirements Orders (SCRs) Naming:**

**Gregory Village Partners, L.P., Village Builders, L.P., Joseph J. Lee, Grace M. Lee, Alan Choi, Kauen Choi, Joseph William O'Malley, and Floyd G. Taylor as Dischargers for the real property located at 1643 Contra Costa Boulevard, Pleasant Hill, Contra Costa County (Site 1), and**

**Chevron U.S.A. Inc., MB Enterprises, Inc., Philip M. Lehrman, Jane A. Lehrman, and Marjorie P. Robinson as Dischargers for the real property located at 1705 Contra Costa Boulevard, Pleasant Hill, Contra Costa County (Site 2)**

## I. Summary

The Water Board Staff Cleanup Team (Staff) recommends that the Water Board adopt individual SCRs for Sites 1 and 2. This Staff Report provides the technical basis for the following assertions:

1. Chlorinated volatile organic compounds (CVOCs) were released from a former waste oil tank and a former dry cleaner at Site 2 (see Section III below).
2. Chevron is appropriately named as a discharger at Site 2, based on its prior ownership and operations (see Section IV below).
3. A CVOC groundwater plume from Site 2 has commingled with a different CVOC groundwater plume from Site 1 (see Section V below).
4. Central Contra Costa Sanitary District (CCCSD) should not be named as a discharger in either SCR (see Section VI below).

## II. General Background

The Sites 1 and 2 are located about 500 feet apart in a commercial district of Pleasant Hill, Contra Costa County (Figures 1and 2). Staff has provided direct regulatory oversight of Site 1 since 2002 when Gregory Village Partners, L.P. (GVP) voluntarily enrolled in the Water Board's cost recovery program. GVP conducted site investigation and cleanup, and does not object to being named as a discharger in the SCR. Because both CVOCs and petroleum-related chemicals are present in groundwater beneath the eastern and southeastern areas of Site 1, GVP asked the Regional Water Board to issue a SCR for Site 2 naming Chevron and MB Enterprises, Inc. as dischargers. In addition, GVP and Chevron asserted that CCCSD should be named as a discharger in both SCRs.

Site 1 is a small suite located in the Gregory Village Shopping Center, a rectangular-shaped commercial parcel improved with a one-story building that was constructed in approximately 1950. The shopping center is bounded by Contra Costa Boulevard to the east, Doris Drive to the south, Doray Drive to the north, and single-family residential properties to the north and west. Based on soil, soil vapor, and groundwater analytical data, a dry cleaner at Site 1 released tetrachloroethylene (PCE) to the subsurface.

Site 2 is a rectangular-shaped parcel bounded by Contra Costa Boulevard to the east, Doris Drive to the north, Linda Drive to the west, and a parking lot and commercial building to the south. The main parking lot for the Gregory Village Shopping Center is located directly to the north of Doris Drive. Underground storage tanks (USTs) that leaked chemicals into the environment, along with a former dry cleaner, were once present on Site 2. Based on soil, soil vapor, and groundwater data, the subsurface beneath and downgradient of Site 2 is contaminated with multiple CVOCs (i.e., PCE, trichloroethylene or TCE, and the degradation compounds cis-1,2-Dichloroethene, trans-1,2-Dichloroethene, and vinyl chloride) and various petroleum constituents.

The historical maximum detections of critical CVOCs associated with both sites are listed in Table 1. Groundwater data indicates the CVOC plume from Site 2 has commingled with the CVOC plume from Site 1 (Figure 3).

## III. Substantial Evidence of CVOC Releases from the Former Steel Waste Oil UST and Former Dry Cleaner at Site 2

There are two suspected sources of these compounds at the Site: the former dry cleaner and the former waste oil tank. PCE is the major dry cleaning solvent used in the United States (Reich 1979). TCE is only rarely used in dry cleaning but is frequently used in metal degreasing (Schneberger 1979; Kimbrough et al. 1985)." The evidence present below supports staff's assertion that unauthorized releases of several CVOCs, chiefly PCE (a common dry cleaning and automotive repair solvent) and trichloroethylene (TCE, a common metal degreaser and parts cleaner solvent), and various petroleum constituents (e.g., benzene, toluene, ethylbenzene, xylenes, MtBE, etc.), occurred at Site 2.

### CVOC Release from Steel Waste Oil UST

An automotive fueling facility existed on the northern portion of Site 2 for over 60 years. Standard Oil, the predecessor of Chevron, operated from 1950 until 1977. Chevron operated at Site 2 from 1977 until 2003. Automotive repair work was conducted on Site 2 from approximately 1950 to 1987. In 1972, Standard Oil installed a 1,000-gallon steel waste oil UST at the time a large automotive repair and maintenance building was constructed at Site 2. A waste oil UST was used at Site 2 from 1972 to 1988.

Prior to the 1972 construction, the common (central) property line between 1705 and 1709 Contra Costa Boulevard was shifted to the south approximately 35 feet. The southern part of the new service station building, along with the steel waste oil UST, were positioned over a section of the former dry cleaner parcel. In late 1986, Chevron purchased the two

properties and merged them into a single parcel (the present-day 1705 Contra Costa Boulevard parcel).

In May 1986, fourteen years after the steel waste oil UST was installed, the UST was removed by Chevron and replaced with a double-walled, fiberglass waste oil UST. During the removal of the steel UST, the tank was severely damaged, and multiple holes were discovered. A soil sample collected beneath the tank pit, at a depth of eight feet, contained 11 mg/kg of "waste oil." In January 1988, the fiberglass waste oil UST was removed during a major reconstruction project and found to be in good condition, with no holes or other damage observed.

It is common knowledge that PCE and TCE were used at automotive repair and maintenance facilities to clean brakes, carburetors, and fuel injection systems, and to degrease engines and other parts.[1] [2] [3] USTs were commonly used to store waste oil and other chemicals by the automotive repair industry. Staff's conclusion that the contamination emanating from Site 2 comes from these sources is consistent with Chevron's consultant's data. A February 3, 1989, report from EA Engineering, Science, and Technology, Inc. (EA) to Chevron regarding Site 2 states "The chlorinated hydrocarbons detected at the Pleasant Hill site are tetrachloroethylene (PCE), trichloroethylene (TCE), cis-1,2-dichloroethylene (DCE), trans-1,2-dichloroethylene (also DCE), vinyl chloride (VC), chloromethane, methylene chloride, chloroform, and 1,2-dichloroethane.

Soil Data

High CVOC soil concentrations generally reflect a specific release point/area. Figures 4 and 7 show the maximum concentrations of PCE and TCE detected in various soil samples collected within and near the former steel waste oil UST.

A soil sample collected within the tank pit at 10 feet below grade in 1988 contained 0.2 mg/kg of PCE and 0.035 mg/kg of TCE. In December 2011, a soil sample collected at a depth of five feet within the former waste oil UST excavation from vapor probe boring VP-1 contained PCE and TCE at 1.2 mg/kg and 1.4 mg/kg, respectively. Another soil sample collected at a depth of 9.5 feet from boring CPT-13, which was also advanced adjacent to/within the former waste oil UST pit, contained PCE at 0.34 mg/kg and TCE at 0.21 mg/kg, respectively.

[1] USEPA, November 1993, Economic Impact Analysis of the Halogenated Solvent Cleaning NESHAP, EPA-453/D-93-058.

[2] State of California Environmental Protection Agency/Air Resources Board, June 1997, Status Report, Perchloroethylene Needs Assessment for Automotive Consumer Products.

[3] State of California Environmental Protection Agency, November 2006, Automotive Aerosol Cleaning Products: Low-VOC, Low Toxicity Alternatives, Report prepared by Institute for Research and Technical Assistance for the Department of Toxic Substances Control and City of Santa Monica.

For comparison, soil concentrations of 0.7 mg/kg for PCE and 0.46 mg/kg for TCE are sufficient to cause leaching to groundwater, according to this Regional Water Board's Environmental Screening Levels (ESLs).[4]

The soil data depicted on Figures 4 and 7 indicates a distinct CVOC release from the former steel waste oil UST.

Soil Vapor Data

High soil vapor concentrations generally reflect a specific release point/area. Figures 5 and 8 show the maximum concentrations of PCE and TCE detected in various soil vapor samples collected within and near the former steel waste oil UST.

In May 1988, very high concentrations of PCE (up to 3,247,500 µg/m³) and TCE (up to 109,500 µg/m³) were detected in a soil vapor sample collected from probe V10, which was advanced directly within the former waste oil UST pit. In contrast, the maximum PCE concentrations detected in V2 and V3, two 1988 soil vapor probes advanced about 25 feet north and 25 feet west of V10, were 40,800 µg/m³ and 900,000 µg/m³, respectively.

Soil vapor sampling conducted by Chevron in 2011 revealed the highest concentrations of PCE and TCE in soil vapor (e.g., 2,500,000 µg/m³ and 2,100,000 µg/m³, respectively), from VP-1, a soil vapor point installed less than 10 feet away from V10.

For comparison, this Regional Water Board's ESLs for the soil vapor to indoor air concern at commercial developments for PCE and TCE are 2,100 µg/m³ and 3,000 µg/m³, respectively.

The soil vapor data depicted on Figures 5 and 8 indicates a distinct CVOC release occurred from the former steel waste oil UST.

Groundwater Data

High groundwater concentrations generally reflect a specific release point/area. Figures 6 and 9 show the maximum concentrations of PCE and TCE detected in various groundwater samples collected within and near the former steel waste oil UST.

In December 1987-January 1988, approximately one year after Chevron purchased and merged the two properties into a single parcel, groundwater samples analyzed from on-Site monitoring well MW-C (located about 100 feet north of the former waste oil UST) detected PCE at 1,800 µg/L and TCE at 570 µg/L. In January 1989, PCE and TCE were detected in on-Site monitoring well EA-2, which was installed within the filled excavation of the former waste oil USTs, at < 0.5 µg/L and 1,700 µg/L. A February 1989 EA report stated "Well EA-2 was installed near SVCA point V10 (the location of the former waste oil tanks), the point of highest chlorinated hydrocarbons in the soil gas." A September 1989 EA report indicates a groundwater sample from EA-2 contained TCE at 2,700 µg/L, while the PCE concentration was < 25 µg/L. The 1989 groundwater data are additional

[4] See Regional Water Board webpage:
http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/esl.shtml

supporting evidence that TCE was released at the location of the former steel waste oil UST.

A pump and treat remediation system was operated by Chevron for about five years (1991 to 1996) to mitigate the high concentrations of CVOCs and petroleum hydrocarbons. This interim remedial measure was designed to utilize monitoring well EA-2, the well installed within the former waste oil UST pit. However, well MW-D was later added to the treatment system due to the detection of separate-phase petroleum hydrocarbons or "free product" downgradient of the fuel USTs. During the extraction and treatment of polluted groundwater, the maximum influent concentrations of PCE and TCE were 6,000 µg/L and 1,300 µg/L, both from a sample collected on April 3, 1995. In the last influent groundwater sample collected on January 3, 1996, the concentrations of PCE and TCE were 2,000 µg/L and 750 µg/L, respectively.

In May 2003, a groundwater sample from EA-2 contained PCE, TCE, cis-1,2-DCE, and vinyl chloride at concentrations of 3,100 µg/L, 3,600 µg/L, 2,900 µg/L, and 81 µg/L, respectively. EA-2 was destroyed by Chevron in March 2005.

For comparison, this Regional Water Board's ESL for PCE and TCE where groundwater is considered a current or potential source of drinking water is 5 µg/L.

Based on the above information and the groundwater data depicted on Figures 6 and 9, Staff conclude that a distinct CVOC release from the former steel waste oil UST occurred.

**CVOC Release from the Former Dry Cleaner**

According to Chevron, a dry cleaner operated for 30 years at 1709 Contra Costa Boulevard (the southern part of Site 2), reportedly from 1956 until late 1986.

According to telephone books reviewed at the Pleasant Hill Public Library, a dry cleaning business operated on the former 1709 Contra Costa Boulevard property from at least 1962 through 1984. Telephone directories further provide evidence that One Hour Martinizing Cleaners operated at the Site in August 1961 and continued until at least late 1966. The concept to use PCE, a non-flammable solvent, in the dry cleaning business, was pioneered by chemist Henry Martin in the 1930s. It is common knowledge that One Hour Martinizing revolutionized the use of PCE in their dry cleaning machinery. PCE has been detected in the subsurface at various One Hour Martinizing franchises in the United States and California due to releases from leaking dry cleaning equipment, floor drains, and private sewer laterals.[5]

An August 1966 advertisement in a phone book included the words "ONE HOUR DRY CLEANING AT NO EXTRA CHARGE!" and "WE OPERATE OUR OWN CLEANING PLANT & SHIRT LAUNDRY." This notice confirms that dry cleaning actually occurred

[5] State Coalition for Remediation of Drycleaners: http://www.drycleancoalition.org/search/?search_text=One+Hour+Martinizing&go=Search This search page lists a subset of One Hour Martinizing sites located in the United States where PCE was used and released to soil and/or groundwater.

at Site 2; the business was not merely a "drop off" location. By 1970, the dry cleaner was named "Pleasant Hill One Hour Cleaners." A permit from the City of Pleasant Hill Building Department, dated August 17, 1971, describes proposed construction activities at 1709 Contra Costa Blvd. to consist of "REMODEL DRY CLEANERS." The renovation of the dry cleaner coincided with a major reconstruction project for the Standard Oil service station at 1705 Contra Costa Boulevard.

In 1980 and 1985, the dry cleaner was named "J's Pleasant Hill Cleaners." An undated, unsigned "LEASE AGREEMENT" provided by Chevron, reportedly covering the former dry cleaner parcel and covering a five year time period between September 1, 1981, and August 31, 1986, states "Lessees shall use the premises for a dry cleaning establishment …" The lease agreement contains the names of prior property owners, Ned and Marjorie P. Robinson and Philip M. Lehrman and Jane A. Lehrman, and the previous operators of the dry cleaner, Morris E. Jorgenson and Genoise M. Jorgenson. The November 1986 phone book contained no entry for the dry cleaner. A building permit application to Chevron for demolition of the dry cleaner building indicates the structure remained on-Site until December 1987.

As described below, there is evidence, mainly soil and groundwater data, that CVOCs were released at the location where a dry cleaner operated at Site 2. Several exploratory borings were advanced on the parcel, and soil and groundwater samples were found to contain PCE and related CVOCs that are typical degradation products of PCE in the environment (e.g., TCE, cis-1,2-DCE, and vinyl chloride).

Soil Data

High CVOC soil concentrations generally reflect a specific release point/area. As shown on Figure 4, the maximum detected concentration of PCE from a soil sample collected within the footprint of the former dry cleaner is 20 mg/kg, from boring CPT-14.

For comparison, soil concentrations of 0.7 mg/kg for PCE are sufficient to cause leaching to groundwater, according to this Regional Water Board's Environmental Screening Levels (ESLs).[6]

The soil data depicted on Figures 4 and 7 likely reflects a distinct CVOC release from the former dry cleaner.

Soil Vapor Data

High soil vapor concentrations generally reflect a specific release point/area. Figures 5 and 8 show the maximum concentrations of PCE and TCE detected in various soil vapor samples collected within and around the former dry cleaner.

In 1988 four soil vapor probes were installed on the former dry cleaner parcel. The maximum detected concentrations of PCE and TCE were 19,347 $\mu g/m^3$ and 1,095 $\mu g/m^3$, respectively, from vapor probe V1 located approximately 25 feet east of EA-2. These

[6] See Regional Water Board webpage:
http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/esl.shtml

concentrations are significantly lower than the soil vapor samples collected adjacent to the former steel waste oil UST.

For comparison, this Regional Water Board's ESLs for the soil vapor to indoor air concern at commercial developments for PCE and TCE are 2,100 µg/m³ and 3,000 µg/m³, respectively.

Staff believes the western section of the previous building near soil boring CPT-14 is the area where the former dry cleaner equipment was present, however, no soil vapor samples have been collected in this area of Site 2. Nevertheless, the soil vapor data depicted on Figures 5 and 8 points to a distinct CVOC release from the former dry cleaner.

Groundwater

High groundwater concentrations generally reflect a specific release point/area. Figures 6 and 9 show the maximum concentrations of PCE and TCE detected in various groundwater samples collected within the former dry cleaner footprint. The maximum concentrations of PCE and TCE detected in groundwater were from samples collected and analyzed from CPT-14 were 630 µg/L and 8 µg/L, respectively.

The groundwater data depicted on Figures 6 and 9 generally indicates a separate and distinct CVOC release from the former dry cleaner on Site 2.

Based on the above information, Staff concludes that there is substantial evidence that CVOCs were released from the dry cleaner on Site 2.

**No Substantial Evidence of Upgradient CVOC Source**

Chevron suggested, without providing direct evidence, that an upgradient source, or sources, could be contributing to the CVOCs detected in the subsurface beneath Site 2. There is no direct evidence the CVOCs detected in soil, soil vapor and groundwater beneath and downgradient of Site 2 originated from an upgradient (off-Site) source. The adjacent upgradient property (1725 Contra Costa Boulevard), formerly the Dean Pierce Paint Company, has a long history of use as a paint manufacturer and supplier. A 1,000-gallon steel UST was removed from the property on July 16, 1986. The UST reportedly contained "mineral spirits." Several holes were noted in the UST after it was exhumed, and two soil samples contained low concentrations of mineral spirits (referred to in the records as "paint thinner") up to 18 mg/kg. The environmental case for the leaking UST was closed by the Contra Costa County Health Services Department on July 20, 1994. The concentrations of mineral spirits found on the adjacent site were not substantial enough to migrate to Site 2 and, indeed, soil and groundwater samples from Site 2 do not contain constituents that would be indicative of "mineral spirits" or "paint thinner."

**Conclusion**

Based on the detections of PCE and TCE in soil, soil vapor, and groundwater samples collected and analyzed over the past 28 years (Table 1), Staff conclude that both of these CVOCs were used and released as a result of historic automotive repair and dry cleaning activities at Site 2. PCE and TCE soil concentrations are high at the former steel waste oil

UST location, while only PCE soil concentrations are high at the former dry cleaner. This data are consistent with a release from the former steel waste oil UST.

The discharges of both PCE and TCE are a result of common industry-wide practices for dry cleaners and automotive repair stations that operated from the 1950s to the mid-1980s in the San Francisco Bay area.

## IV. Basis for Naming Chevron Under the Water Code as a Discharger at Site 2

Water Code Section 13304(a) provides the standard for naming parties to cleanup orders. It states in part:

> *Any person who has discharged or discharges waste into the waters of this state in violation of any waste discharge requirement or other order or prohibition issued by a regional board or the state board, or who has caused or permitted, causes or permits, or threatens to cause or permit any waste to be discharged or deposited where it is, or probably will be, discharged into the waters of the state and creates, or threatens to create, a condition of pollution or nuisance, shall upon order of the regional board, clean up the waste or abate the effects of the waste, or, in the case of threatened pollution or nuisance, take other necessary remedial action, including, but not limited to, overseeing cleanup and abatement efforts.*

Staff recommend naming Chevron as a discharger at Site 2 because:

1. Chevron was the owner/operator of the former steel waste oil UST that discharged contaminants which have migrated into waters of the State; and,
2. Chevron was the former landowner where a dry cleaner operated and discharged contaminants which have migrated into waters of the State.

### Chevron was the Owner/Operator of the Former Steel Waste Oil UST

Water Code section 13304 allows the Water Board to name an operator or former operator to a cleanup order if there is substantial evidence that it discharged pollutants to soil or groundwater during its tenure. Staff concludes that there is substantial evidence that CVOCs were released from the steel waste oil UST at Site 2 during Chevron's tenure.

From 1972 to 1988, Standard Oil and its successor Chevron owned and/or and operated at the portion of Site 2 where CVOC discharges from a steel waste oil UST occurred. There is substantial soil, soil vapor, and groundwater data which demonstrates the steel UST released CVOCs to the environment (see section III above).

### Chevron was the Former Landowner Where a Dry Cleaner Operated

Precedential State Water Board orders provide the framework for naming former landowners to cleanup orders. A former landowner can be named to a cleanup order if it meets all of these three criteria:

1. Former landowner owned the property at the time of the discharge;
2. Former landowner had knowledge of the activities that resulted in the discharge;
3. Former landowner had the legal ability to prevent the discharge.

In this case, Chevron meets all three criteria above.

From December 31, 1986, to March 2003, Chevron owned the parcel where a dry cleaner previously operated, had knowledge of the activities that resulted in the release of CVOCs to the environment, and had the legal ability and technical knowledge to clean up the discharge and prevent the discharge from migrating.

Not only did Chevron have knowledge of CVOC contamination before they purchased Site 2 and during their ownership of Site 2, Chevron had the legal ability to conduct source removal, and characterize and remediate to the maximum extent feasible to prevent further migration of the CVOCs. Although Chevron may contest the source of the contaminants (former dry cleaner versus steel waste oil UST), or whether the discharge occurred during Chevron's ownership or occupancy, State Board Orders clarify that "an actual movement of waste from soils to groundwater and from contaminated to uncontaminated ground water at the site … is sufficient to constitute a 'discharge.'" (State Water Board Order 86-2). Given the shallow groundwater flow direction and gradient, and lack of any known subsurface barriers to CVOC migration, there is no question that the CVOC contamination Chevron discovered in 1986 continued to migrate or "discharge" during Chevron's ownership of Site 2.

Chevron had the legal ability to appropriately conduct remediation of CVOCs in soil and groundwater during their time of ownership to prevent the CVOCs from migrating beneath other properties. The interim groundwater pump and treat system installed by Chevron was not initiated in a timely manner (the system start-up occurred over four years after Chevron purchased Site 2), nor was the system effective in preventing off-Site plume migration.

Furthermore, Chevron was aware of a significant soil contamination problem at Site 2. Despite the high detections of PCE and TCE in shallow soil and soil vapor, no remediation efforts were undertaken by Chevron to reduce the mass of CVOCs in soil in the areas of the former steel waste oil UST or former dry cleaner. A fundamental tenet of proper site remediation is to conduct adequate source removal activities; such remediation was not conducted during Chevron's ownership of Site 2. As a result of deficient remedial efforts, CVOCs are currently present at concentrations well above risk-based standards, thereby posing a significant threat to human health and groundwater quality.

**Previous UST Case Closure**

Chevron may claim that the 2005 UST case closure precludes the Regional Water Board naming Chevron as a discharger now. The Regional Water Board's 2005 UST case closure at Site 2, however, was based on technical information available at the time. New information undermines the case closure rationale presented by Chevron. Therefore, the

previous case closure should not be used as a reason for excluding Chevron from the SCR issued for Site 2.

On September 13, 2004, Chevron issued a report to the Regional Water Board titled "Closure Request." The report concluded the extent of contamination had been adequately characterized as follows, "The subsurface impact has been defined to the degree necessary to determine if the site poses a threat to human health, the environment, or other sensitive nearby receptors."

Our January 14, 2005, the Regional Water Board issued a uniform case closure letter to Chevron Environmental Management Company (a subsidiary to Chevron) for the formerly leaking USTs at Site 2. As stated above, the case closure determination was based on Chevron's assertion that the extent of petroleum hydrocarbons and CVOCs in soil and groundwater had been adequately characterized, and that the residual chemicals did not pose a risk to human health, groundwater quality, and the environment. The Water Board's January 3, 2005, *Site Closure Summary* states, in part:

"Petroleum hydrocarbons and halogenated volatile organic compounds (HVOCs) will persist on the Site and into the public right-of-way of Linda Avenue, Dorris (sic) Drive and Contra Costa Boulevard. The petroleum hydrocarbons and HVOCs are stable, and both the petroleum hydrocarbons and HVOCs appear to be naturally attenuating, though the petroleum hydrocarbons are attenuating more rapidly."
"A site management plan will be maintained until the residual petroleum hydrocarbons and HVOCs no longer pose a threat. Currently, there appears to be not threat to public health, the environment or water resources. Future potential threats, though not expected, can be limited through implementation of a site management plan."

Based on data provided by Chevron, Staff believed the groundwater plume emanating from Site 2 was localized in extent, lay mainly beneath City streets, and did not extend to the north and northwest beneath the adjacent and downgradient Gregory Village Shopping Center. Additional new information clearly demonstrates the groundwater plume was not adequately characterized and, in fact, underlies the eastern part of the shopping center and commingles with a different CVOC plume associated with the former P&K Cleaners (Site 1).

In 2004, Chevron argued that "the site appears to present no significant risk to human health or the environment." The 2004 closure request included an evaluation of the postulated inhalation risk to workers within the existing service station building by using groundwater concentrations from an on-Site well (MW-C) and not the available historic soil vapor data. From their analysis, Chevron concluded "The constituents of concern are below the screening level applied by the RWQCB-SFBR to identify commercial risk."

In 2004-2005, vapor intrusion at dry cleaner CVOC release sites was not given a lot of regulatory attention. In 2011, the California Department of Toxic Substances Control issued vapor intrusion guidance which recommends lower indoor air and soil vapor screening levels for vapor intrusion and a rigorous process to evaluate and mitigate vapor intrusion. Similarly, the Regional Water Board lowered indoor air and soil vapor in 2013 ESLs. The current screening levels for CVOCs in soil vapor and groundwater are

dramatically exceeded at Site 2. High CVOC concentrations in soil vapor pose a significant risk to on-Site workers, building occupants within the Gregory Village Shopping Center, and other commercial and residential properties adjacent to and near Site 2 (and also near Site 1). For these reasons, the site meets the criteria for re-opening sites.

## V. Evidence of Commingled CVOC Plume

There is evidence that the CVOC plume from Site 2 migrated in groundwater to the north and northwest and beneath the Gregory Village Shopping Center, and commingled with the CVOC plume associated with Site 1, which has migrated beneath a residential subdivision north of Site 1. This is important because in order to protect human health and groundwater quality, the different sources of the CVOC contamination must be cleaned up to appropriate levels. Oftentimes, commingled groundwater plumes are more spatially extensive and contain higher contaminant concentrations than a plume from a single source.

Figure 3 shows the maximum concentrations of PCE detected in groundwater for both Site 1 and Site 2. Evidence of a commingled plume includes the following:

- In 1997, during a due diligence investigation for GVP, CVOCs were detected in grab groundwater samples collected from multiple soil borings advanced upgradient and cross-gradient of Site 1. For example, PCE and TCE were detected in GS-3, a soil boring advanced about 25 feet upgradient/southeast of Site 1 at 830 µg\L and 240 µg\L. (see figure 3).

- PCE, TCE, and other CVOCs were detected in shallow groundwater beneath and adjacent to the hydraulically-upgradient Chevron gas station/former dry cleaner (1705 Contra Costa Boulevard), with detections of PCE up to 5,000 µg/L from an off-site groundwater sample collected in 1989. Prior to the 2005 destruction of groundwater monitoring wells by Chevron for the fuel UST case at Site 2, PCE, TCE, cis-1,2-DCE, and vinyl chloride were detected in groundwater samples at concentrations up to 3,100 µg/L, 3,600 µg/L, 2,900 µg/L, and 81 µg/L, respectively (see figure 3).

- On December 22, 2009, GVP advanced multiple borings and completed a grab groundwater investigation within the southeastern part of their property, downgradient of Site 2 and upgradient of Site 1. Several CVOCs (including PCE, TCE, cis-1,2-DCE, and trans-1,2-DCE), total petroleum hydrocarbons reported as gasoline (TPH-g), benzene, toluene, ethylbenzene and xylenes (the BTEX compounds), and MtBE, a gasoline additive, were detected in groundwater samples collected in the eastern main parking lot by Site 1 (see figure 3). Both the petroleum-related constituents and the CVOCs are consistent with the contaminants found in soil and groundwater beneath Site 2. The concentrations and distribution of these contaminants in groundwater are indicative of a plume that migrated off-Site from Site 2.

- TPH-g and MtBE (constituents related to automotive fuel releases), and several CVOCs, were detected in a shallow groundwater sample collected from CPT-1,

a boring approximately 75 feet southeast (upgradient) of Site 1 (see figure 3).and advanced by Chevron in 2011. The presence of TPH-g, MtBE, and CVOCs in shallow groundwater upgradient of Site 1 indicate these chemicals migrated in a north to northwesterly direction from Site 2.

## VI. Central Contra Costa Sanitary District (CCCSD) is not a Discharger

In a standard evaluation of whether a party is a discharger, Regional Water Board Staff considers whether the party:

- owned the property where the discharge occurred;
- had knowledge of the discharge or activities that caused the discharge; and,
- had legal ability to prevent the discharge.

Based on the analysis presented below, Staff concludes that there is insufficient data to assert that a discharge from CCCSD's sewer lines resulted in the contamination at issue in the two SCRs.

Because of numerous policy considerations, as well as guidance from the California courts,[7] Regional Water Boards historically have not named sewer owners/operators as dischargers merely because they owned or operated a sewer system which released contamination. Staff is only aware of one instance in which a Regional Water Board named a sewer owner/operator as a discharger, and in that case there was evidence to support each of the following criteria:

1) There was a release from the sewer main that contributed to the plume;
2) The sewer owner/operator knew of leaks and failed to repair them;
3) The sewers were in poor condition and/or were not maintained; and,
4) The sewer owner/operator was aware of/or permitted discharges into a leaking sewer.

In order to determine whether CCCSD should be named as a discharger, Staff considered evidence submitted by CCCSD and GVP and compared it to the four criteria above. Staff has reviewed evidence submitted by GVP and CCCSD and

[7] GVP notes in their submission that Porter-Cologne (Water Code section 13304) is a strict liability statute. The cases which provide guidance here pertain to similar claims brought under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) concerning the responsibility of a sewer owner/operator for contamination resulting from releases from sewers. CERCLA, like Water Code section 13304, is a strict liability statute, and while these cases are not binding precedent, they do provide useful guidance. In these cases, the courts have refrained from identifying sewer owners/operators as "responsible parties" (the CERCLA rough equivalent of the Water Code's "discharger") merely because they owned or operated a sewer system. (*See, e.g., Fireman's Fund Insurance Co. v. City of Lodi* (9th Cir. 2002) 302 F.3d 928, 946 ["it is doubtful whether Lodi may be considered a PRP merely as a result of operating its municipal sewer system"]; *Lincoln Properties, Ltd. V. Higgins*(E.D. Cal. 1992) 823 F.Supp. 1528, 1542-43 ["To hold the County liable for its 'normal' activities in owning and maintaining the sewer line and wells would be an anomalous result]; *Adobe Lumber, Inc. v. Hellman* (E.D. Cal. 2009) 658 F.Supp.2d 1188, 1205-06 [declined to find that the City was an innocent party where the City knew of dry cleaning operation, had a "reactive" sewer maintenance management and no studies of leakage].) Staff finds the criteria from these cases useful in ensuring a complete analysis of the facts concerning CCCSD.

concluded that CCCSD is not an appropriate discharger because the sewer lines in the Gregory Village area of Pleasant Hill are in good condition. There is no direct evidence that leaking sewer lines under CCCSD ownership have caused or contributed significantly to the groundwater contamination. None of the above four criteria are met in this case, as explained in more detail below.

**1. No evidence that the sewer system contributed to the groundwater plume**

While there is evidence of incidental leakage from the sanitary sewer lines, there is no direct evidence the leakage contributed substantially to the creation of the CVOC commingled groundwater plume.

We conclude, based upon a review of records submitted by GVP and CCCSD, that the overall sanitary sewer system in the Gregory Village area of Pleasant Hill appears to have been well maintained and is in generally good condition. Inspections are routinely conducted, and when clogs and breaks in pipes are discovered, they are routinely investigated and repaired.

Fate and transport modeling (PES Environmental, Inc., 2013) adequately demonstrates the levels and locations of contamination in the environment resulted from the releases of CVOCs directly from past dry cleaning and automotive repair businesses, including releases from private sewer laterals, but not directly from the sewage conveyance system owned and operated by CCCSD.[8] [9]

GVP asserts that "at least three suspected sewer leakage locations that have resulted in chlorinated hydrocarbon releases and detections in the subsurface."[10] Staff addresses each of these locations below:

- Apparent Source Area Near the Intersection of Shirley Drive and Cynthia Drive

  GVP identified an area near the intersection of Shirley Drive and Cynthia Drive and manhole M54, an area within the residential subdivision, as an "apparent source area." based on the detection of elevated concentrations of PCE in soil vapor. Additionally, records from CCCSD comment on cracks, open joints, and root infiltration in a sewer line beneath Shirley Drive. CCCSD notes that sewer lines in this area "collect sewage from a residential neighborhood and would not have any PCE in them." Staff does not find this location to be a source area.

- Apparent Source Area in the Vicinity of Manhole M46

  GVP presents several data points and the argument that these points demonstrate a source of PCE in close proximity to manhole M46. However, the highest concentrations of PCE in soil vapor samples were at lower depths near the

[8] CCCSD, May 28, 2013, CCCSD Responses to 13267 Letter Questions, Pages 2-5.
[9] CCCSD, December 18, 2013, Summary of Response to Water Board 13267 Letter, Pages 1-3.
[10] GVP Submission, July 3, 2012, at pp. 8-11.

groundwater table, indicating that shallow groundwater is the likely source of the CVOCs rather than the soil surrounding the sewer lines.

Staff conclude that the data suggests separate groundwater plumes migrated from the former dry cleaners at Sites 1 and 2, and the former steel waste oil UST at Site 2, to the north-northwest, generally diminishing in concentration from the source areas. Within the commingled groundwater plume, there are a number of wells with variable contaminant concentrations. GVP focused on a single grab groundwater sample from a higher elevation and compared it with deeper samples from groundwater wells. Staff does not find this single data set to be compelling evidence of a source area based on the data originating from different monitoring well screen intervals.

With respect to GVP's evidence and contentions regarding the presence of CVOCs between manholes M44 and M46 and the adjacent parcels, the CCCSD submission notes that the "PCE-laden wastewater from former dry cleaning operations at Gregory Village Shopping Center and at the Chevron Service Station site located at 1705 Contra Costa Boulevard did not flow in the sanitary sewer from manhole M44 to manhole M46 and is not a source for PCE found at adjacent parcels." Staff finds that CVOCs at these locations could not be from a release along the sanitary sewer lines.

- Suspected Source Area in Linda Drive Along Sewer

The area along Linda Drive, a street establishing the western boundary of Site 2, is an area where Staff specifically identifies a need for additional data. The original vitrified clay sewer line in this area was replaced in 1987-1988 as part of Chevron's station upgrade project, and the new cast iron line was put in a location different than the original clay line. The original sewer line served both the former Standard Oil automotive repair station and the former dry cleaner. CCCSD has supplied several figures which show the locations of both the original and existing sewer lines. There is insufficient soil and groundwater data to reach the conclusion that the older sewer line was a release point.

**2. No evidence of the sewer operator's knowledge that the sewer system is leaking or needs repair**

CCCSD asserts that it had no knowledge that the sewer collection system in the area of the Gregory Village Shopping Center and Site 2 leaked significantly in the past or is currently leaking and needs repair.[11] [12] Neither Chevron nor GVP have presented evidence to the contrary. CCCSD submitted evidence of a robust maintenance program, which included video inspections, regular cleaning of the sewer pipes, and spot repairs, to identify and address problem areas. These measures are designed to ensure the overall integrity of the sewer conveyance system. There are many

[11] CCCSD, May 28, 2013, CCCSD Responses to 13267 Letter Questions, Pages 5-11.
[12] CCCSD, December 18, 2013, Summary of Response to Water Board 13267 Letter, Pages 3-4.

instances where minor leaks in the sewer mains were detected and repaired, but there is no evidence of major leakage or deferred maintenance of the sewer lines by CCCSD.

GVP submitted information concerning CCCSD's alleged failing sewer lines[13], but admits that "GVP has little information concerning how well or how poorly the system operated … near the Site prior to the mid-1990s." It is Staff understanding that dry cleaning operations ceased at Site 1 in 1991 and at Site 2 in 1986. Evidence of a "failing sewer system" in the late 1990s or 2000s is not indicative of CCCSD's behavior during the time when the dry cleaners would have disposed of separator wastewater down drains and/or private sewer laterals.

GVP documented two instances from the relevant time period above that Staff specifically reviews and addresses here:

Instance 1

- January 19, 1979 - CCCSD inspection notes identify a sunken spot in Shirley Drive at Luella Drive.

  GVP identifies a "sunken spot" in a sewer line in Shirley Drive at Luella Drive.[14] A January 2, 2003, drawing provided by CCCSD entitled "Collection System Renovations – Spot Repairs" shows that a 10-foot section of 6-inch diameter vitrified clay pipe in Luella Drive leading from manhole M58 was repaired. CCCSD's repair of the sanitary sewer in this location suggests reasonable sewer maintenance.

Instance 2

- March 10, 1977 – A "Daily Maintenance Report" describes the condition of the sewer main in Linda Drive during the installation of a "tee" connection. The line at the tee connection located "153' up from M.H. at Linda Dr and Doris Dr" is described as "in very poor shape has lots of cracks."

  Linda Drive forms the western boundary of Site 2, and is an area where Staff has specifically identified a need for additional soil and groundwater data. Staff understands that the original sewer line in this area was replaced as part of a Chevron service station construction project in 1987-1988, and that the new sewer was put in a different location from the original line.

  According to GVP submissions concerning the more recent condition (e.g., 1990s-2000s) of CCCSD's sewer system, Staff does not find evidence of major repairs needed on the CCCSD sewer lines in the area of the groundwater contamination. There is no tangible evidence CCCSD was aware of any needed repair beyond routine maintenance.

[13] GVP Submission, July 3, 2012, pp. 6-8
[14] GVP Submission, July 3, 2012, p. 6

**3. No evidence of poor maintenance or inspection schedules**

CCCSD provided numerous records pertaining to the maintenance and inspection of the sanitary sewer lines in the areas around Site 1 and Site 2 (CCCSD, 2013). Staff reviewed the information, and concurs that the sewer lines owned and operated by CCCSD were maintained and inspected appropriately since the 1970s.

GVP submitted information concerning CCCSD's alleged failure to inspect and maintain sewer lines.[15] Similar to section VI.B.2 above concerning leaks in the sewer system, GVP's submission indicates that "GVP has little information concerning … how well or how poorly CCCSD inspected and maintained the system near the Site prior to the mid-1990s." Evidence of a "failing sewer system" in the late 1990s or 2000s is not indicative of the condition of the sewer system during the time when the dry cleaners would have disposed of separator wastewater to the sanitary sewer lines.

**4. No evidence that the sewer operator knew of or permitted discharges of separator wastewater into the leaking sewers**

Staff reviewed information provided by CCCSD and GVP on the question of whether CCCSD permitted or knew that dry cleaners discharged separator wastewater into the sanitary sewers. GVP has not provided any evidence that CCCSD knew of separator wastewater disposal from the dry cleaners at either Site 1 or Site 2 during the relevant time period.

Staff does not agree with CCCSD that discharges of PCE-laden wastewater into the sewer system have been prohibited since 1953. CCSD maintains that any discharge of PCE to the sewer collection system would have been illegal. However, documents reveal a complete prohibition of PCE-laden wastewater to the main sewer lines did not go into effect until 2007.[16]

Prior to 2007, CCCSD allowed for PCE to be discharged to the sanitary sewer within specified limits. For example, Ordinance No. 99 (adopted on July 11, 1974) allowed the discharge of "Total Identifiable Chlorinated Hydrocarbons" to sanitary sewers at a concentration not exceeding 0.002 mg/L for "50% of time" and not exceeding 0.004 mg/L for "10% of time." CCCSD Ordinance No. 147 (adopted on August 27, 1981) states "No person shall discharge wastewater containing in excess of "0.50 mg/l total identifiable chlorinated hydrocarbons."

The allowable PCE discharge concentrations before 2007 were far lower than what would be expected in PCE-impacted wastewater, which would be on the order of 150,000 µg/L.[17] Neither GVP nor Chevron have provided any evidence that CCCSD had specific knowledge at any time that PCE-laden wastewater in excess of the

[15] GVP Submission, July 3, 2012, pp. 6-8
[16] CCCSD, May 28, 2013, Attachment E
[17] Dry Cleaners – A Major Source of PCE in Ground Water, March 27, 1992 http://www.swrcb.ca.gov/rwqcb5/water_issues/site_cleanup/dry_cleaner_rpt.pdf

Ordinance's low levels was being discharged into their system from either Site 1 or Site 2.[18]

## Attachments

**Figure 1:** Site Vicinity Map
**Figure 2:** Site Location Map
**Figure 3:** Maximum PCE Concentrations in Groundwater at 1643 and 1705 Contra Costa Boulevard and Immediate Vicinity, Pleasant Hill, Contra Costa County
**Figure 4:** Maximum PCE Concentrations in Soil at 1705 Contra Costa Boulevard and Immediate Vicinity, Pleasant Hill, Contra Costa County
**Figure 5:** Maximum PCE Concentrations in Soil Vapor at 1705 Contra Costa Boulevard and Immediate Vicinity, Pleasant Hill, Contra Costa County
**Figure 6:** Maximum PCE Concentrations in Groundwater at 1705 Contra Costa Boulevard and Immediate Vicinity, Pleasant Hill, Contra Costa County
**Figure 7:** Maximum TCE Concentrations in Soil at 1705 Contra Costa Boulevard and Immediate Vicinity, Pleasant Hill, Contra Costa County
**Figure 8:** Maximum TCE Concentrations in Soil Vapor at 1705 Contra Costa Boulevard and Immediate Vicinity, Pleasant Hill, Contra Costa County
**Figure 9:** Maximum TCE Concentrations in Groundwater at 1705 Contra Costa Boulevard and Immediate Vicinity, Pleasant Hill, Contra Costa County

**Table 1:** Historic Maximum Detected Concentrations of Volatile Organic Compounds (VOCs)

[18] CCCSD, May 28, 2013, Attachment E

**Figure 1: Site Vicinity Map**

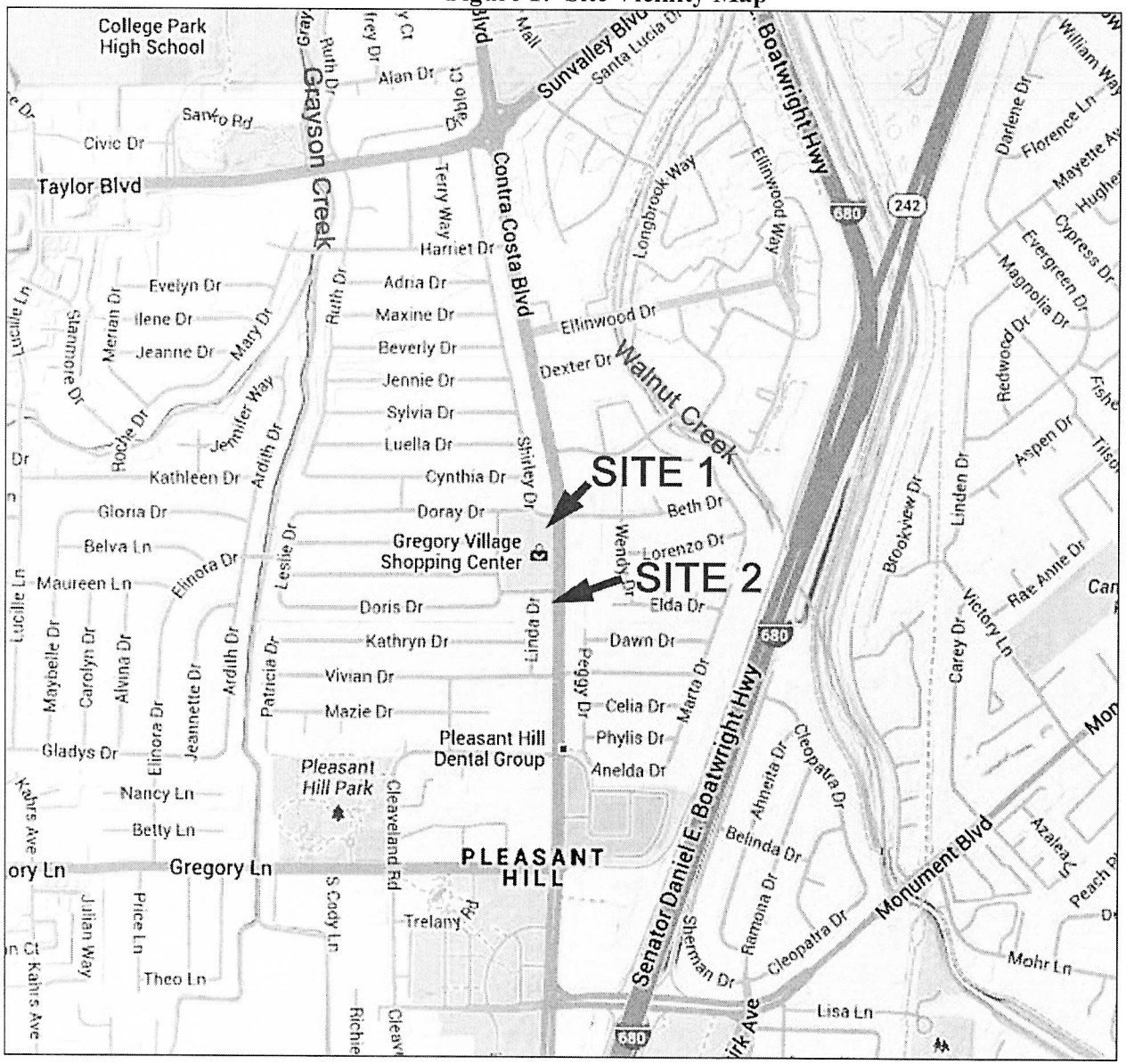

**Figure 2: Site Location Map**

**Figure 3: Maximum PCE Concentrations in Groundwater at 1643 and 1705 Contra Costa Boulevard and Immediate Vicinity, Pleasant Hill, Contra Costa County**

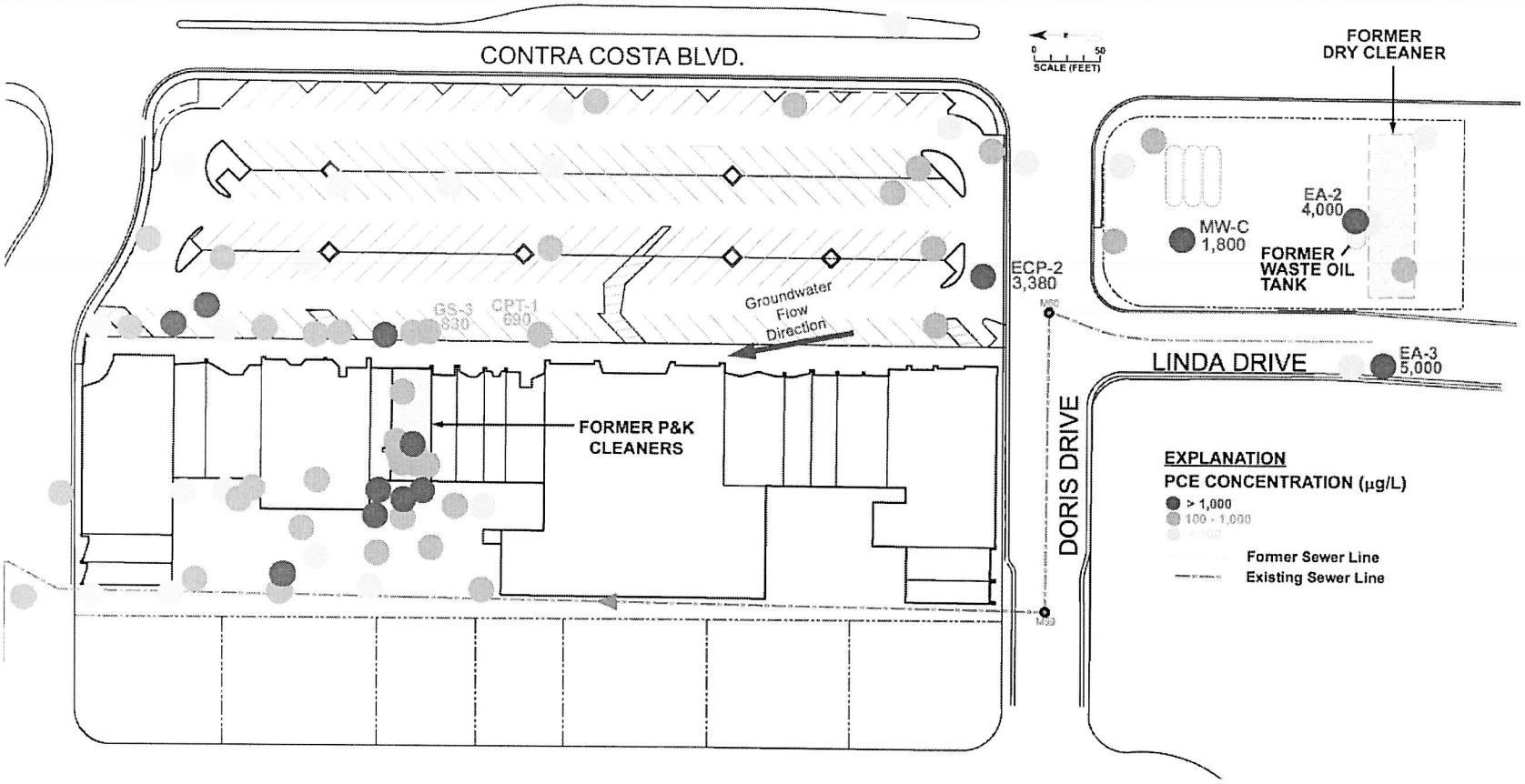

**Figure 4: Maximum PCE Concentrations in Soil at 1705 Contra Costa Boulevard and Immediate Vicinity, Pleasant Hill, Contra Costa County**

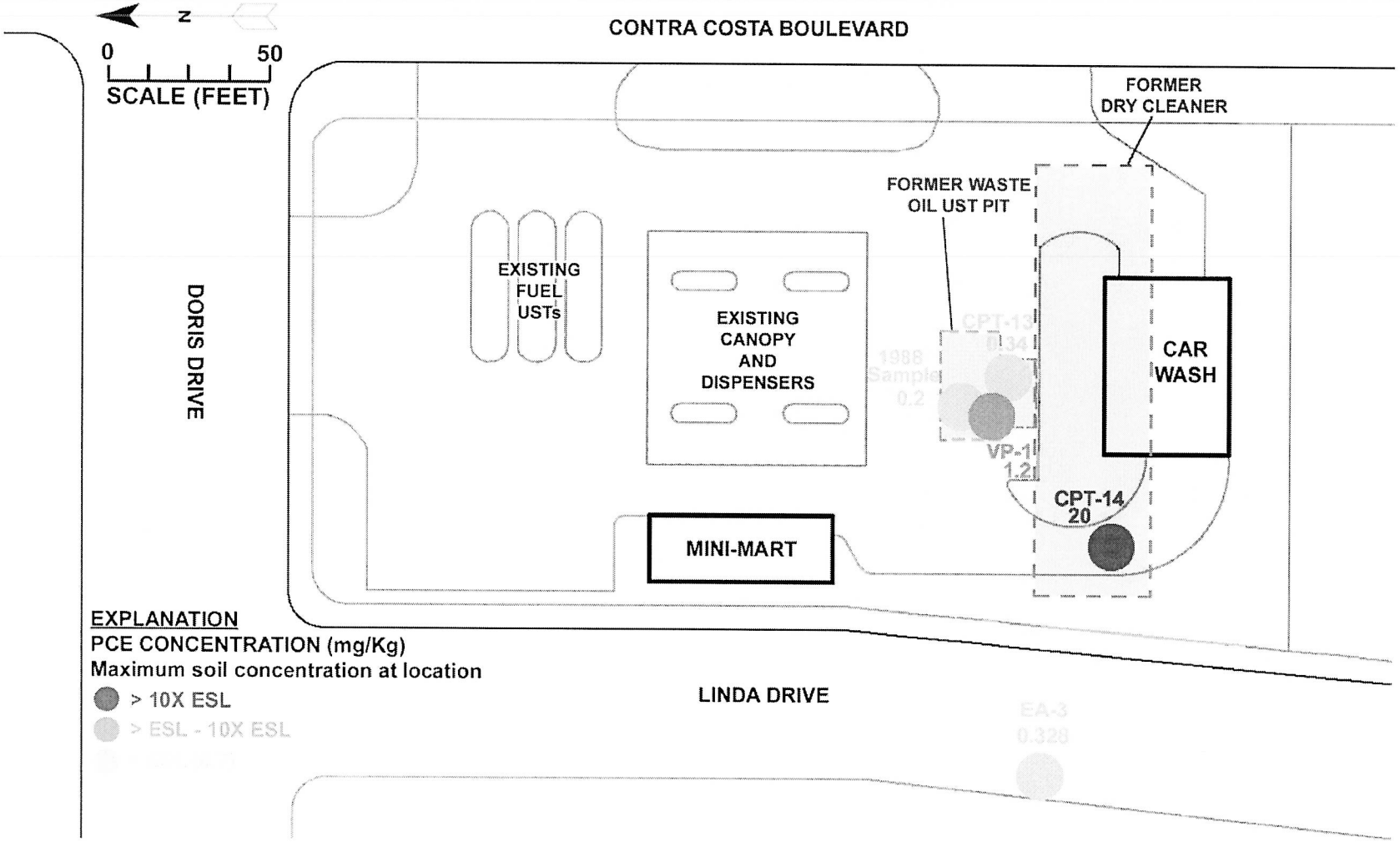

**Figure 5: Maximum PCE Concentrations in Soil Vapor at 1705 Contra Costa Boulevard and Immediate Vicinity, Pleasant Hill, Contra Costa County**

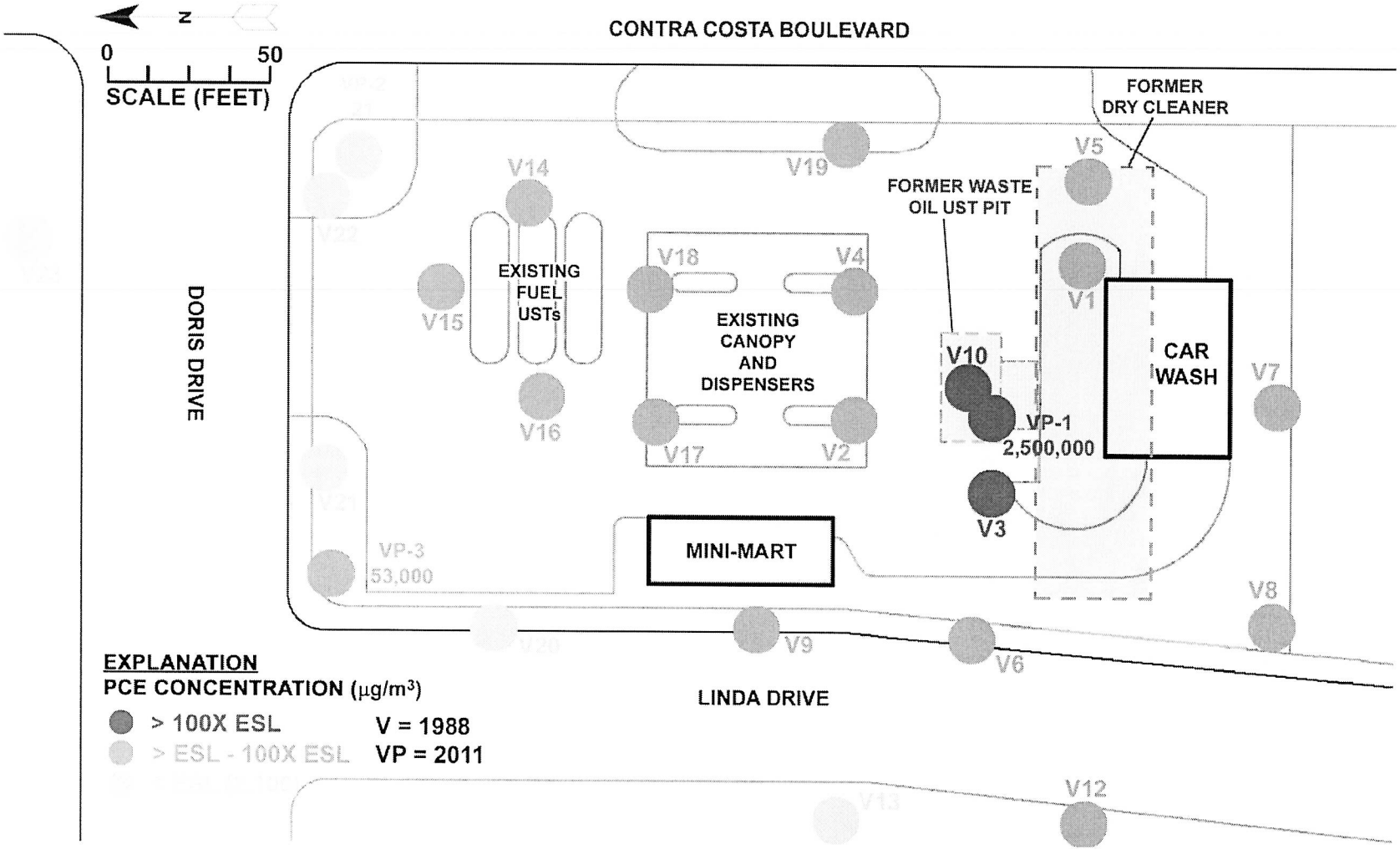

**Figure 6: Maximum PCE Concentrations in Groundwater at the 1705 Contra Costa Boulevard Propertyand Immediate Vicinity, Pleasant Hill, Contra Costa County**

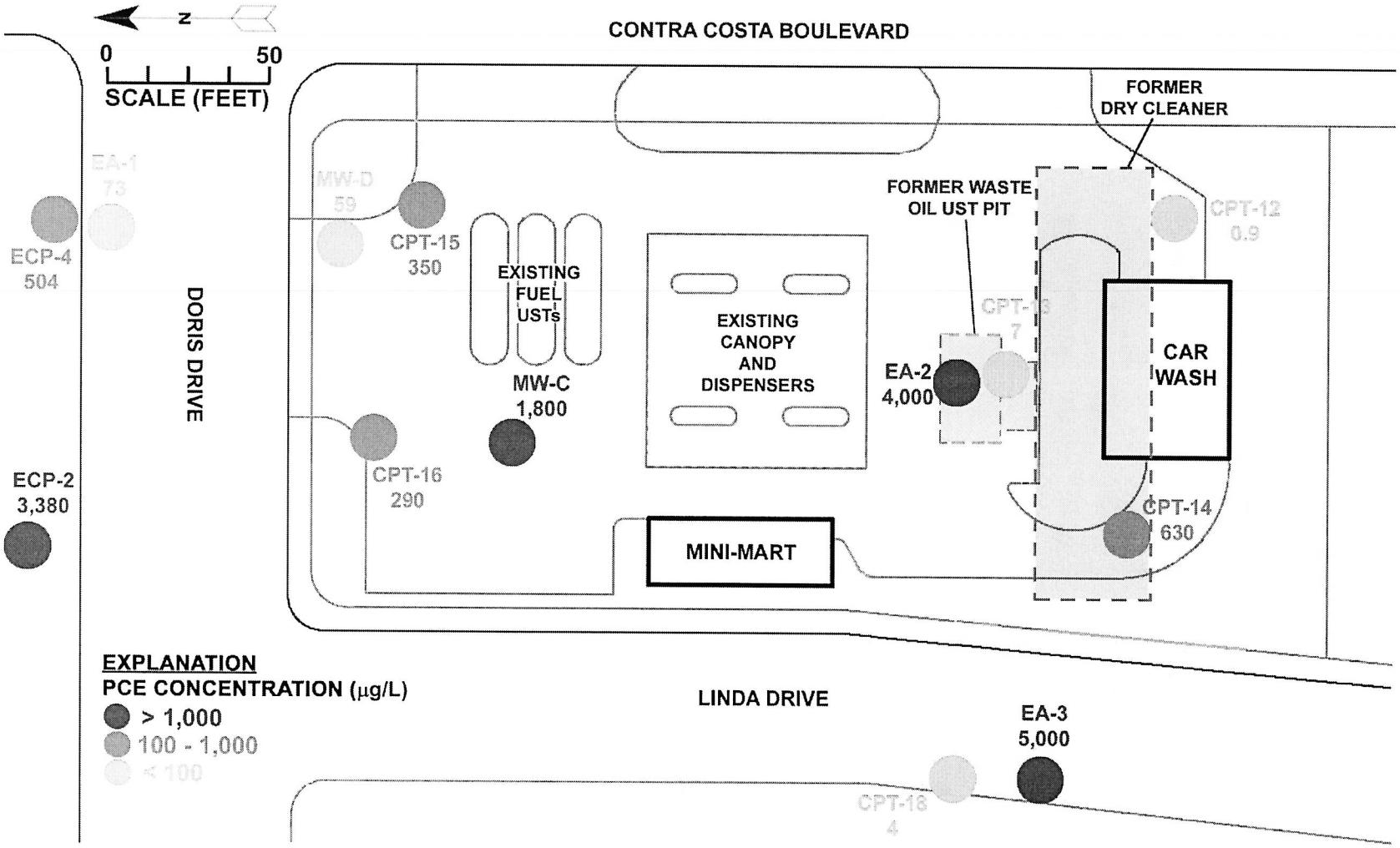

**Figure 7: Maximum TCE Concentrations in Soil at the 1705 Contra Costa Boulevard Property and Immediate Vicinity, Pleasant Hill, Contra Costa County**

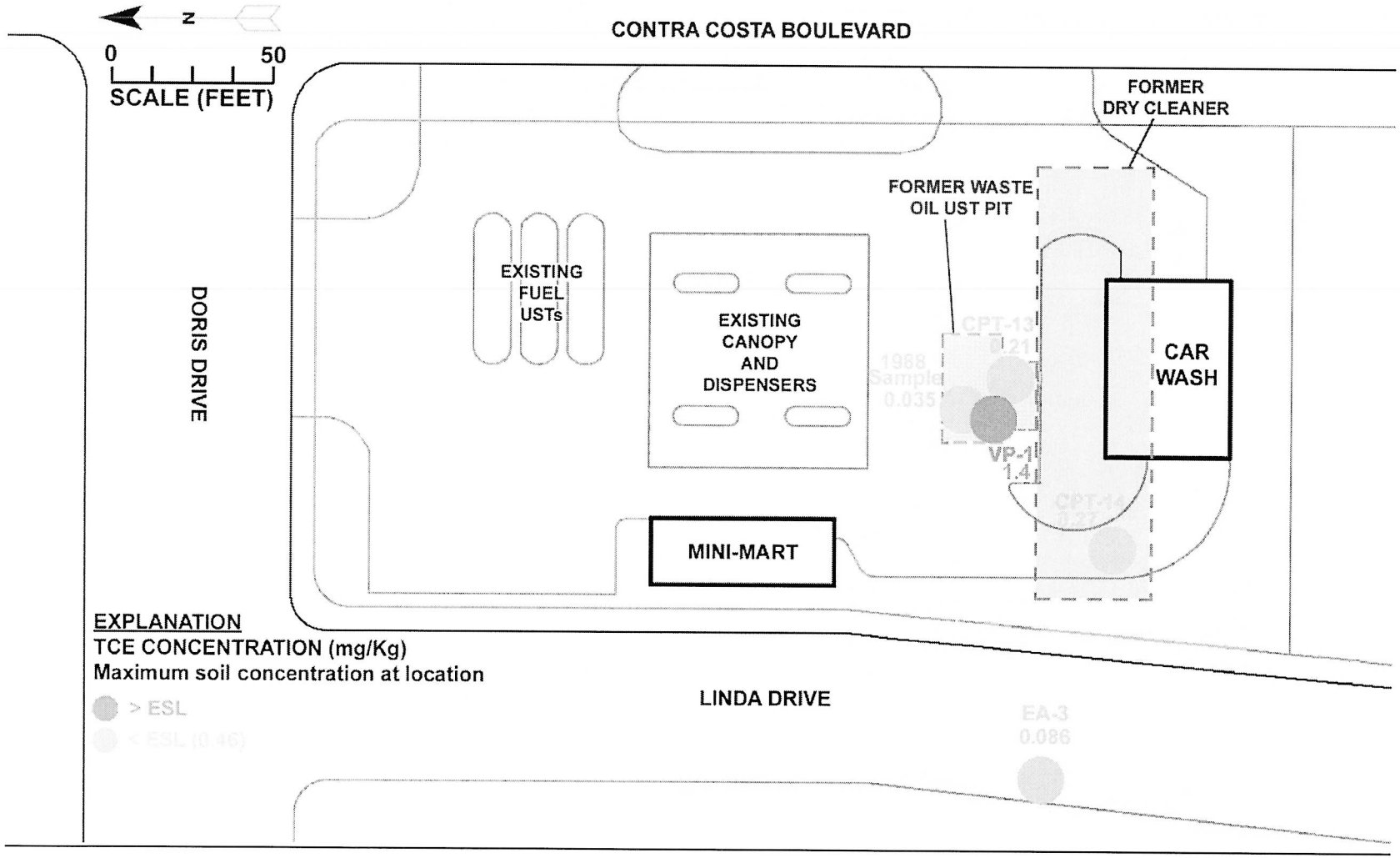

**Figure 8: Maximum TCE Concentrations in Soil Vapor at 1705 Contra Costa Boulevard and Immediate Vicinity, Pleasant Hill, Contra Costa County**

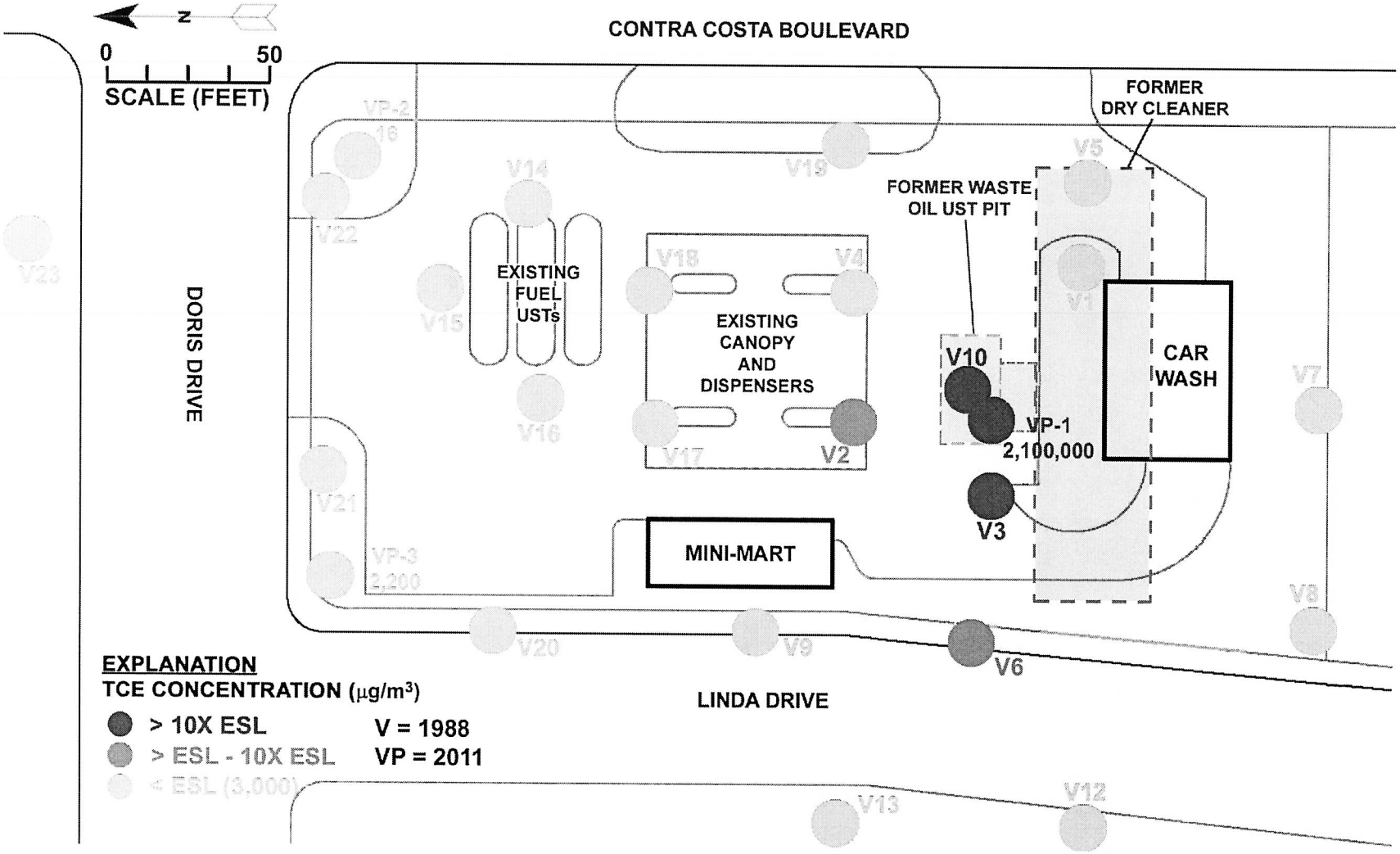

**Figure 9: Maximum TCE Concentrations in Groundwater at 1705 Contra Costa Boulevard and Immediate Vicinity, Pleasant Hill, Contra Costa County**

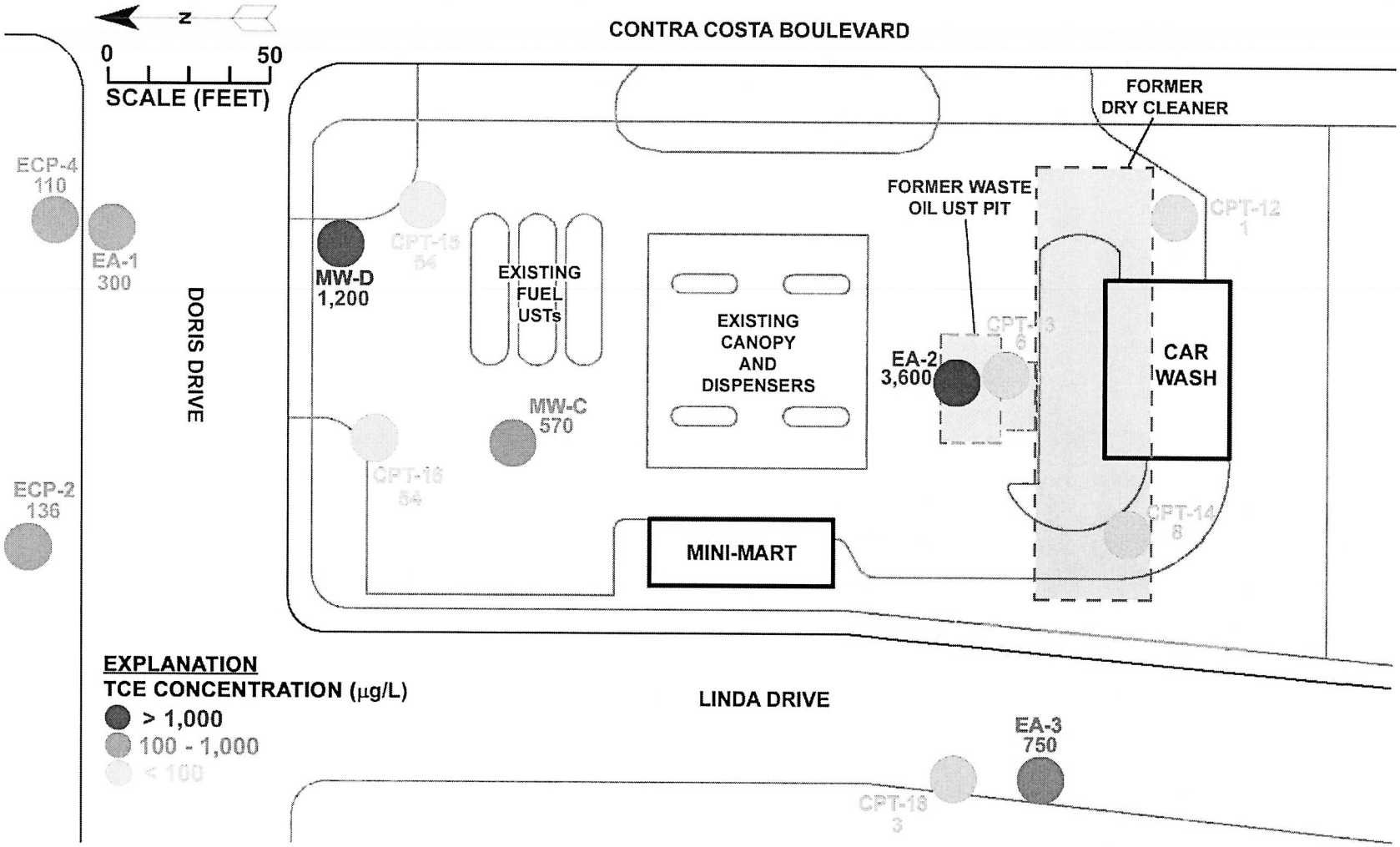

**Table 1: Historic Maximum Detected Concentrations of Volatile Organic Compounds (VOCs)**

| | SITE 1 (P&K Cleaners) | | | SITE 2 (Chevron) | | |
|---|---|---|---|---|---|---|
| **Chemical/Compound** | Soil (mg/kg) | Groundwater (µg/L) | Soil Vapor (µg/m³) | Soil (mg/kg) | Groundwater (µg/L) | Soil Vapor (µg/m³) |
| **PCE** | 5.3 | 27,000 | 1,490,000 | 20 | 5,000 | 3,247,700 |
| **TCE** | 0.03 | 130 | <12,900 | 1.4 | 3,600 | 2,100,000 |
| **cis-1,2-DCE** | <0.04 | <40 | <9,520 | 0.45 | 2,900 | 410,000 |
| **Vinyl chloride** | <0.05 | <50 | <6,130 | <48 | 910 | <5,200 |
| **Benzene** | NA | NA | 40.2 | 2.2 | SPH (12,000 dissolved) | 520,733 |
| **TPH-g** | NA | 620 | NA | 80 | SPH (110,000 dissolved) | 916,667 |
| **MtBE** | NA | 140 | NA | <1 | 540 | <7,300* |

Key

| | |
|---|---|
| mg/kg | Micrograms per kilogram |
| µg/L | Micrograms per liter |
| µg/m³ | Micrograms per cubic meter |
| NA | Not Applicable (site is not a source of these compounds) or Not Analyzed |
| SPH | Separate-phase hydrocarbons/free product detected in on-Site wells |
| * | Although the minimum laboratory detection limit is typically determined by the appropriate screening value, due to dilution of sample (most likely because of the presence of chlorinated compounds in high concentrations), the reporting limit was elevated. |